



**THE
SIXTEENTH
LACUS
FORUM
1989**



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LACUS FORUM

1989

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THE SIXTEENTH LACUS FORUM 1989

edited by
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PREFACE AND INTRODUCTION

I was delighted to host the 16th LACUS Forum at Queen's University, Kingston, Canada in August 1989, during which the papers included here were presented.

When I completed my doctorate in linguistics in 1978, I found — as I am sure many linguists also experienced — that language analysis outside the Transformational-Generative paradigm was rarely welcomed in traditional linguistic circles. Although at that time the dominance of the various T-G models was waning and serious problems with the approach remained unanswered, many linguists still felt that any work outside “the best-developed and established language model of the time” was not really linguistics at all. (Even now I occasionally hear the terms “syntax” and “T-G analysis” being used synonymously.)

As an unashamedly corpus-based text linguist for whom document in communicative context and not made-up sentence forms the start of my investigation, I found few linguists would even look at my examples of language — after all, they were mere surface phenomena! Even fewer would choose to examine with me the exciting complexities of language use in the search for textual clues which might give meaning to the syntax, semantics and morphology of the written sentence.

Within this prevailing scholastic climate, I found it refreshing to join this association. LACUS offered me the opportunity to present and publish work in areas of text organization, lexical connection, and clausal and sentential connections which were outside the interests of more traditional linguistic organizations. It has provided both the incentive and the practical support for me to develop a sound linguistic basis for my other work in technical and business communication, ESL, and instructional science. And it has enabled me to develop an association of like-minded linguists as colleagues, associates and friends. My hosting of this conference here this year and my editing of this Forum partially repay the debt I owe this organization.

LACUS is probably still unique in its truly liberal attitude in welcoming scholarly work from any traditional, new or embryonic approach to linguistic study. Tagmemic, stratificational, systemic and functional — as well as transformational-generative — approaches are equally acceptable, and I have found within the members of this organization a real willingness to listen to and to study other approaches and ideas in a genuine effort to gain insights into their own work. This free and open spirit of scholastic enquiry has spawned, encouraged and supported many important developments such as Michael Gregory's communication linguistics, Victor Yngve's human linguistics, and Adam Makkai's musical linguistics. The conference represented by this Forum continued this eclectic tradition.

Although other organizations now recognize the importance of studies in discourse, semiotics, pragmatics, stylistics and language in social context, for example (as well as the core topics of syntax, semantics, morphology and phonology), it is I believe only at LACUS conferences that we can expect a program which helps to relate or *unite* core and peripheral linguistic interests. It is my belief that our understanding of language will develop most significantly if we take a holistic approach to language study, in which all aspects of language are considered in the development of an eventual all-embracing model of human articulation. The search for a formal account of syntax in isolation from semantics, textual connection, and stylistics is as futile as the colorless, green ideas which enveloped linguistic thought throughout the 1960's and 1970's. I feel that LACUS, through its conferences and publications, is providing the means through which a sound holistic approach to

language study might eventually emerge.

The inter-connectedness of linguistic research presented at the conference became apparent to me when I undertook the difficult task of separating the papers into areas of specialization. Although I have followed fairly traditional lines in this organization, many of the papers cross the rather artificial boundaries between syntax and morphology, between phonology and social interaction, between discourse and pragmatics, for example. Indeed some papers include elements of several areas of study. As an example, although I have included Melvin Hoffman's paper under "Historical Studies", it could equally well have been included under phonology, morphology or language and society. This healthy disregard for any restriction caused by traditional compartmentalization is reflected in many of the papers presented here.

The funding I received for this conference indicates the wide importance of linguistics studies in the broader scholarly network. Although the most generous contributions came from my own department (Mechanical Engineering) and faculty (Applied Science), I also received contributions from the Departments of English, French, Sociology, Computing, Psychology, and Graduate Studies and Research — with important matching sums from the Faculty of Arts and Science and The Principal's Fund. I gratefully acknowledge all the financial help I received, which helped to make the conference a success.

I also wish to record my appreciation to Valerie Becker Makkai, whose help in the planning, organization and financial control of the conference was invaluable — and without whom this Forum would not now be in your hands.

Kingston, Canada
March 1990

Michael P. Jordan

I

SPECIAL LECTURES

1989 PRESIDENTIAL ADDRESS



THE REST OF THE ICEBERG EXPLORING THE OPERATIONAL DIMENSION OF LANGUAGE

Walter Hirtle
Fonds Gustave Guillaume
Université Laval, Québec

Words do not label things already there.
Words are like the knife of a carver: they
free the idea, the thing, from the general
formlessness of the outside.

Edmund Carpenter¹

THE DIMENSIONS OF LANGUAGE

I wonder if you have ever reflected on how long it has taken linguists to discern, even vaguely, the limits of the object of their studies. Not that we have a precise idea of the dimensions of language even today, but I do think we have made some progress. We have all heard of the bad old days when a benighted missionary ("benighted" largely because he was not born in the twentieth century) analyzed some hitherto unrecorded language in terms of the cases, moods and tenses of Latin. Today, everyone deplores this practice, even those who unwittingly analyze some language they do not know in terms of the categories of their mother tongue (often inflated into UG). Nevertheless, it is generally recognized that to grasp the reality of its object linguistics should try to take in the whole spatial dimension of language by extending far beyond the Indo-European languages to embrace, but not strait-jacket, languages of other types throughout the world.

Also widely accepted is the need for linguistics to keep in view the two relationships involved in the temporal dimension of language. At the beginning of the century, Saussure insisted that linguistics must not be limited to the diachronic but must also include the synchronic, lacking which the linguist would fail to see the all-important systemic facet of language which permits us to speak. This doctrine was favourably received and descriptive linguistics soon came into its day. Indeed, the pendulum may have swung too far because when one considers the contemporary scene one gets the impression that many linguists now neglect the historical perspective. Unfortunately, some programs of study reflect this failure to take in the diachronic as well as the synchronic and many graduating students must have the impression that the particular model or set of rules with which they have been indoctrinated springs fully armed from the brain of the ideal speaker (or perhaps from that of the ideal linguist). In spite of such regressions, however, we have made progress because those linguists whose primary interest is to understand the reality of language, rather than create a formal model, realize that what they observe of language, discourse, is the product of a synchronic system, and that this system is itself the outcome of a long diachronic development.

A third dimension which has come into clearer focus in the present century is what I have called elsewhere (1985) the existential dimension. There is nothing new here since language has for many centuries been considered a complex entity consisting of both the physical and the mental, both signs and their meanings, without either of which it cannot exist. What certain scholars did manage to do earlier this century was upset this traditional apple-cart by proposing, in the name of science, that we limit our consideration of language to what is directly observable and measurable. And since we always observe language in the form of sentences, i.e. as discourse, for such scholars language was reduced to "a set of sentences". Not only that. Since we can record and measure the sounds of a sentence but not its meaning, a sentence was then reduced to, in Firth's well known phrase, what "disturbs the air and your eardrums". Although I doubt if any linguists today would defend this extreme of positivism, which banished from linguistics all

¹ Cited in Lowe 1985 (p. 3) from the introduction to *I Breathe a New Song: Poems of the Eskimo*, ed. Richard Lewis.

consideration of meaning, some approaches are still having trouble getting rid of the last traces of "purely formal grammar" and accepting meaning as a full-fledged partner, let alone as the senior partner, in the language enterprise.

That earlier positivist aberration has, by way of reaction, led more and more linguists to take meaning as seriously as the physical form of language had been. A recent discussion with a west coast scholar, Leonard Talmy, gave me a good example of this. He maintained that we must consider meaning as primary — a point I readily agreed with — and then went on to illustrate what he meant. He argued that the "multiplex concept" (an impression of iterativity) can be expressed in a variety of ways: from the plural -s of the substantive and adverbs like *often* to the *keep-ing* pattern of the verb (as in *He kept telephoning*). If I have understood him correctly, the fact that the physical means of expression varied was of no consequence since we have here a "gradient". It appeared to me that in attempting to restore meaning to its rightful place he was neglecting the physical form, the sign; if this is so, the pendulum has swung to the other extreme, a position no less detrimental to linguistics. The point I am trying to make is that the linguist interested primarily in the reality of his object, and only secondarily in his theory or model, will take into account both the physical and the mental, will never lose sight of the sign/meaning binarity involved in the existential dimension of language.

To complete this rapid survey of how we try to delimit the object of our study, I shall describe a fourth dimension of language, one which is characteristically twentieth century and is, in fact, inherent in the temporal dimension described above. Since at least the thirties, a growing number of scholars has been interested in the operations lying behind and producing the sentences that constitute the observable, surface manifestations of language. On this continent, partly because of the desire to build a language machine, the main interest has been in syntactic relationships and much time, energy and ingenuity has been expended in attempting to simulate or otherwise account for the mental operations that bring words into relationship with one another. The exciting development here is the widespread recognition, implicit or explicit, that certain mental processes are necessary to produce a sentence, that language has an operational dimension involving mechanisms of thought which, once analyzed, will give us the means of understanding and explaining what we observe. (I suspect that later generations will smile indulgently when they see how long it took us to realize that we have to think in order to speak, just as we have to think in order to walk or even to breathe.) Unfortunately many current attempts to analyze language mechanisms are based on the curious assumption that the constructions of syntax can be analyzed without a prior analysis of the elements composing them, that one can have a theory of the sentence without a theory of the word. As a consequence, this type of analysis has often taken a formalist bent which has led it further and further from the nature of the mental processes proper to language. In short, the operational dimension, the dimension we necessarily exploit every time we speak, consists of two moments — the constructing of words and the constructing of sentences — and a linguist anxious to embrace the reality of language will try to keep the two in view and be ever aware of the relationship between them.

My argument so far is simply this: if linguistics is to help us understand the nature of language, it will make every attempt to be commensurate with its object, to embrace it in at least these four dimensions (cf. *Ibid*:69):

- (1) the spatial dimension, to provide a place for both the Indo-European type and other types of language found on the face of the Earth;
- (2) the temporal dimension, to provide a method valid for analyzing language on both the diachronic and the synchronic axes;
- (3) the existential dimension, to provide a means for dealing with both the mental and the physical in language, both the meaning and the sign;
- (4) the operational dimension, to provide for an analysis of how the speaker constructs both the word and the sentence.

The history of linguistics and the contemporary scene provide numerous examples of scholars neglecting one or the other of the components constituting human language. The future of linguistics, I dare prophesy, lies with those who manage to embrace the whole of this complex reality, which is the object of our science, because the theory

which fails to take into account one or the other part of the iceberg will either move further and further away from its subject and finally lose sight of it, or else suffer the fate of the Titanic.

DELIMITING THE OPERATIONAL DIMENSION¹

It is not easy to delimit any of these dimensions with precision, and perhaps the most difficult to determine is the last, what I have called the operational dimension. I want to focus on this dimension throughout these remarks, restricting comments to a minimal stretch of discourse, a sentence. If you grant that our language produces the appropriate words and sentences every time we want to say something about someone or something, it amounts to recognizing that language is inherently operational. Not only that. If language offers the permanent possibility of producing the appropriate words and sentences, it must also include the means of doing so. That is to say, since this possibility is permanently available to anyone who has acquired his mother tongue, even when he is not speaking or listening, it amounts to postulating the existence of a mechanism making these word-producing and sentence-producing operations possible, a mechanism in the subconscious mind — what some might call a cognitive mechanism, but what I prefer to call, with greater generality, a psychomechanism. This term, first used by Guillaume, came to characterize his theory, the Psychomechanics of Language, the theory providing the background for these remarks.

Quite clearly, one way of delimiting the operational dimension of language is to point out that this subconscious — or better, preconscious — mechanism is necessarily at the beginning of the discourse-producing operation, just as a lawn mower is at the beginning of any operation of mowing the lawn. And this is important because it shows that a description of the word-producing and sentence-producing operations resulting in the discourse one has observed and wishes to explain — the description of these operations, I say, is incomplete until they are traced back to the mechanism permitting them. That is to say, a description of the particular system embodying the psychomechanism involved is essential to our understanding some phenomenon of discourse: to explain a given use of the definite article, for example, it must be traced back to the system of the article described as an operative mechanism; similarly, the metaphorical sense of a lexeme can be explained in linguistics only by tracing it back to the mechanism permitting one to develop such senses. Of course many scholars have sought and are seeking underlying systems to explain such phenomena — with varying degrees of success. But the very fact of seeking implies that one considers the structure and architecture of a language a necessary pre-condition for any act of language. And this is an important thing to keep in mind if we want to get back to the ultimate linguistic condition for a given sentence.

Important though this recognition may be, however, it is not sufficient to satisfy our curiosity as to why the speaker produced a particular word or sense or syntactic arrangement. Critics of structuralism have often pointed out that there must be something more involved in an operation of discourse-production to account for the specificity of the resulting stretch of discourse. In more general terms, one might say that a description of underlying operative system is a necessary but insufficient condition for explaining observed discourse. What more is required? What else must be present at the beginning of a preconscious act of language to bring into existence that particular sentence?

The problem I am raising here might be put this way: what triggers an act of language? That is, what is it that sets the language mechanism in operation to produce a specific stretch of discourse? What made me produce that last sentence, or this sentence, or this whole talk? Not being the first one to raise this problem, I would like to cite several authors, none of them linguists, who have brought out different aspects of it. First of all a psychologist, William James (1983:245), who appeals to our everyday experience of what precedes an act of language:

¹ A first version of the following remarks appeared in *Mélanges offerts au Cardinal Louis-Albert Vachon*.

Has the reader never asked himself what kind of mental fact is his intention of saying a thing before he has said it? It is an entirely definite intention, distinct from all other intentions, an absolutely distinct state of consciousness, therefore; and yet how much of it consists of definite sensorial images, either of words or of things? Hardly anything! Linger, and the words and things come into the mind; the anticipatory intention, the divination is there no more. But as the words that replace it arrive, it welcomes them successively and calls them right if they agree with it, and rejects them and calls them wrong if they do not. It has therefore a nature of its own of the most positive sort, and yet what can we say about it without using words that belong to the later mental facts that replace it?

It is interesting to note here that James distinguishes two aspects of this prior "mental fact": the intention of saying something and the "thing" to be said, the message. Furthermore he presents this INTENDED MESSAGE as "an absolutely distinct state of consciousness", that is, as something experienced by any speaker. It is a "definite intention" and yet its content is vague and ill-defined, hard to grasp mentally because little of it involves definite images. Even though this content, what the speaker wants to say, may only be divined rather than clearly seen by the mind's eye, it does serve as a sort of background to check the words that come to replace it. Finally, these words, being "later mental facts" — but not yet physical facts — "replace" the intended message, permitting us to talk about it.

I consider this passage from James to be significant for linguists because it helps us discern more precisely the starting point of the act of language, the initial limit of our operational dimension. The intended message is not to be confused with that other necessary pre-condition discussed above, the language mechanism interiorized by the speaker when he learned his mother tongue. For one thing, the system of my language remains the same for me, offers the same possibilities, whatever the sentence I may wish to undertake, whereas what I want to say varies from sentence to sentence. In fact, if, as some would argue, no two experiences, no two states of consciousness are ever absolutely identical, then it follows that the intended message is endlessly variable and this, not only from speaker to speaker but for a single speaker.

There is a second important difference between these two necessary pre-conditions of any act of language, namely where they are to be situated with regard to language. It seems to me obvious, and perhaps most linguists would agree, that our preconscious language mechanisms, as embodied in the system of systems permitting us to produce, to "create" an endlessly varied discourse, are part of our language. On the other hand, the particular experience arising from perception, memory, intellect and/or imagination which constitutes the content of my intended message is quite as clearly outside language. And thank heavens that most of the impressions in our stream of consciousness do not constitute the content of an intended message, or we would have to be talking whenever we are conscious. (It would in fact be a serious pathological disorder if every impression had first to be represented and expressed in language in order for a person to be aware of it.) Another observation will help to illustrate that the intention must exist before the language mechanisms come into play since it triggers their effective operation. It is a common experience to have something to say and to be obliged to wait some time before saying it. (In fact some of you may at this moment have the impression that you do not understand something or that you cannot accept some point but politeness and social convention require you to refrain from languaging this intended message until the question period.) In short, the very awareness of having something to say can only arise before we begin the act of language required to represent and say it.

In our attempt to define as precisely as possible where the operational dimension of language begins, we have identified two necessary pre-conditions: one, outside language, the constantly changing intended message; the other, within the speaker's language, the constant, unchanging mechanism. I should now like to consider what another modern thinker, the philosopher Etienne Gilson, has to say about the intended

message, which he calls "thought in itself", "pure thought" because it constitutes our conscious mental life without any admixture of language:

Tout ce qu'on peut essayer de penser du non-encore-parlé est conditionné par l'impossibilité de le faire sans recourir au langage. La seule chance d'observer *la pensée en elle-même* serait d'en apercevoir une lueur au moment fugitif où elle descend dans le langage, comme ce rayon vert que jette le soleil couchant au moment de s'enfoncer dans la mer. Mais la pensée devenant langage est déjà langage et d'ailleurs même si l'expérience de la pensée pure était possible, il faudrait user du langage pour la communiquer. On ne peut donc que remonter de la pensée parlée à celle qui se parle, s'efforcer de discerner la future pensée de l'après langage dans *celle qui est en train de s'incarner*. C'est au moins difficile, car ce que l'on conçoit mal ne peut s'exprimer clairement, mais il n'y aurait pas de langage si cela ne se concevait pas du tout. (*Linguistique et philosophie* pp. 126-127; author's italics)¹

The most striking point about this passage is the graphic description of what happens at this initial instant when language intervenes: the act of language begins when the intended message slips below the threshold of consciousness to be language and thus made communicable. More important, however, the distinction made here between "after-language thought" and "pure" or, as we might say, "before-language thought" provides us with the two external limits between which the act of language unrolls. In this way Gilson evokes clearly what Waldron calls "the central function of human language: ... it mediates between ... experience and conceptual thought."²

Such remarks bring into focus the relation, fundamental for a linguist, between thought and language, a relation which, as Gilson implies, involves a double relationship: "thought in itself" before it "descends into language" and conceptual thought arising after the intervention of language. Before-language or "pure" thought is not directly dependent on language for its existence; indeed, it is just the opposite since without some experience to talk about no act of language could possibly get under way, as we saw above. That is, without this "experiential" thought there can be no language, but without language there can be no "conceptual" thought. The stream of conscious impressions making up before-language or experiential thought is usually ill-defined, hard to grasp and in itself unsayable because it does not generally come in sayable units. The system of one's language serves precisely this purpose: to provide the psychic means for REPRESENTING these impressions, for grasping and forming them into conceptual units, as well as the physical means for saying them. These conceptual/sayable units, the elements of after-language or conceptual thought, are called words.

The problem of the role of language in providing conceptual units³ is posed in a more general way by the following passage from Einstein's *Ideas and Opinions* (p. 327):

¹ All one can try to think concerning the not-yet-spoken is conditioned by the impossibility of doing it without resorting to language. The only chance of observing *thought in itself* would be to catch a glimmer of it at the fleeting moment when it descends into language, like the green ray the setting sun sends out just as it plunges into the sea. But thought becoming language is already language and besides even if the experience of pure thought were possible, it would be necessary to make use of language to communicate it. All one can do then is to work back up from spoken thought to that which is being spoken, doing one's best to discern the future thought of after-language in *that which is being embodied*. At best, this is difficult because what is poorly conceived cannot be expressed clearly, but there would not be any language if this could not be conceived at all. (My translation)

² Cf. Waldron (1985) p. xv. Curiously, Waldron limits pre-language thought to "sense experience", but there seems to be no reason to exclude contributions from other sources such as memory and imagination.

³ For want of a better term, "conceptual units" is used here to suggest the ordered set of impressions, the representation of experience, constituting the meaning of any word. The term "concept" is used in a more restricted sense, as in traditional usage, for the most highly structured representations such as those expressed by substantives.

What is it that brings about such an intimate connection between language and thinking? Is there no thinking without the use of language, namely in concepts and concept-combinations for which words need not necessarily come to mind? Has not every one of us struggled for words although the connection between 'things' was already clear?

To be noted in passing is the fact that pre-language, experiential thought is not necessarily vague and ill-defined. More important here, however, are the questions evoking the relation between language and thought. At the risk of belabouring my main point beyond your endurance, let me give a two-part answer to the question "Is there no thinking without the use of language?" Yes there is thinking without language, namely what produces before-language thought; no there is no thinking in concepts without language (at least in the sense I am using the term "concept" here) because language is the only means we have of forming concepts from our experience.¹ That is to say, for an idea to enter into rational discourse it must be constructed in the mode of concepts in one's language and given a name. Hence the intimate connection.

Intimate though this connection may be, however, it is not a matter of language simply faxing the intended message. The "struggle for words", a common experience which betokens an important aspect of the double thought-language-thought relation I am talking about, is described in the following scene from Virginia Woolf's *To the Lighthouse*. The passage depicts a character who refrains from waking up a possible interlocutor to begin a conversation because she feels that her intended message cannot be adequately rendered by language.

But one only woke people if one knew what one wanted to say to them. And she wanted to say not one thing, but everything. Little words that broke up the thought and dismembered it said nothing. 'About life, about death; about Mrs. Ramsay' — no, she thought, one could say nothing to nobody. The urgency of the moment always missed its mark. Words fluttered sideways and struck the object inches too low. Then one gave it up; then the idea sunk back again.... For how could one express in words these emotions of the body? express that emptiness there?... It was one's body feeling, not one's mind.

Her intended message — a state of consciousness consisting of thought, emotions, an indefinable idea — exists quite independently of whether or not it is language, a fact permitting the subtle discussion of the character's intention to speak. Here then we have a clear case of the necessary prior condition outside language permitting an act of language.

The main point to be brought out by this passage, however, is the relationship between what "she wanted to say" and how words would say it, between, that is, experience and the meaning expressed by a stretch of discourse. Confronted with the extraordinary richness of her particular state of consciousness, the character finds "little words" inadequate because they would break up this complex experience to provide their paltry linguistic representations. This reductionism involved in languaging a particular area of our conscious awareness is often felt by poets and indeed by anyone with something nuanced or complicated to represent and express. As such it provides a clear indication that any representing of a particular experience by means of language involves abstracting from that experience, categorizing its components, even when the speaker's intention is, as in this case, to express it in all its particularity. The important point here is that the meaning of the resulting sentence — "the later mental facts" — is

¹ This is not to limit all conceptual thinking to the strictly verbal, but rather to suggest that without the prior capacity based on language, the ability to think in, say, mathematical concepts could not be acquired. As Einstein observes in the same passage:

We might be inclined to attribute to the act of thinking complete independence from language if the individual formed or were able to form his concepts without the verbal guidance of his environment. Yet most likely the mental shape of an individual, growing up under such conditions, would be very poor.

not simply a replica of the intended message — the "earlier mental facts" — because a linguistic representation is not a mere reproducing but a re-presenting, a presenting in a conceptual manner, which is different from the original presentation made by perception, memory, imagination. Thus the "struggle for words" is an indication of a distance, which may be minimal, between what we have in mind to represent and express and the result of representing and expressing it with the means made available to us by our language.

So far, we have been trying to discern as clearly as possible where the operational dimension of language begins, but the above passage, in evoking the result, also poses the problem of where it ends. One may first be tempted to say that, quite obviously, an act of language ends with the uttering of the final sound or the writing of the final letter of a sentence. But this would be forgetting that language involves both the physical and the mental, and that the physical sign is just a means for evoking a meaning, by definition mental. That is to say, an act of language terminates with meaning. Furthermore, it does not end with the mental content of each individual sign, but with the compilation, or rather the integration of the various meanings expressed by the different words. Whether this is arrived at by interpreting, generating, stratifying, systematizing, functionalizing, making incident, or in some other way is not my concern here. The point is that we end up expressing a sentence meaning, a specific mental content that somehow coheres, forms a whole.

It reminds me of the well known description of a sentence they used to give in school, as "the expression of a complete thought". Although quite inadequate as a definition since it begs the question, this description does correspond to something in our experience: there is a certain sense of notional integration, of a meaningful whole. Indeed, when confronted with a long and complicated sentence, one may even experience a sense of relief on fitting together all its components. And this summatory condition, as it has been called by Guillaume, would appear to be the final moment of an act of language involving one sentence. But this is not the whole story, even for the speaker.

When we speak, we have the impression that our discourse has to do with something outside itself, that we are talking about external reality, reality outside of language.¹ As Roch Valin puts it, in order to have an act of language, someone must say something about someone or something. The "something" one says can easily be identified with the sentence meaning we have just been discussing, but what can the "someone or something" about which it is said be identified with? If our preceding considerations concerning the representation of some experience have not led us astray, it would seem that we can identify it with that experience. Indeed, since we obviously cannot talk about anything that we are not aware of, we can talk about external reality only insofar as it impinges on our experience. That is to say, sentence meaning is always related to something outside language, namely the intended message, which has now, at the end of the operation, become an effected message (effected, it need hardly be said, with widely varying degrees of success). And just as the first moment of the act of language involves bringing experiential thought into relationship with the system of representation, so its final moment involves bringing the sentence meaning produced into relationship with the same content of experience. At this point every speaker hopes that what he has conceptualized and said corresponds closely with what he has in mind to say. At any rate, this is my ardent wish concerning all I have said so far.

IMPLICATIONS FOR LINGUISTICS

By this time, you may be wondering what these remarks are leading up to. Is this all hair-splitting or does it have some concrete bearing on the problems that we as linguists have to face every day? My whole argument so far has been based on the observations of non-specialists and I have tried not to base my remarks on the postulates of any theory or model. To avoid the impression that what I have said may well concern

¹ I am purposely trying to avoid saying that a sentence talks about "the real world" or "reality" as some authors do because this would suggest to me that the sentence itself is not part of reality.

the ordinary speaker but is of no consequence for the linguist, I would like to bring out a few of the implications involved in the position I have defined.

This position, based on the assumption that meaning is primary in language, is close to what has sometimes been characterized as "the ideational theory of meaning" (cf. Allan 1986:86ff.). Said to derive from Aristotle through John Locke, this theory has been criticized and rejected because the "Ideas" which constitute the meaning of words are "independent of words" and so exist only "in the psyche of the individual" — each individual with his own "Ideas". Obviously, communication would be impossible under such circumstances since the same sign would have a different meaning for each individual. Granted the distinction made above, however, between pre-language, experiential thought, which is independent of words and proper to the psyche of each individual, and conceptual thought made possible by language, the problem can be resolved: it is not our experience itself but our representation of it which constitutes the meaning of words. And since it is through our language that we conceptualize experience, all those who learn the same language have similar means of conceptualizing it and so are able to communicate.

The point of view I have proposed above differs from a related view of language which is fairly widespread, namely that "the function of language is to communicate concepts between people", a view considered by some scholars to be "extremely obvious" (Schank and Kass 1988:182)¹. Clearly, if one assumes that the role of language is limited to communicating, the operational dimension will be reduced considerably because the whole process of representing the intended message will be excluded. This of course presupposes a very different relationship between thought and language, one where language, something like a telephone system, provides the hardware but is not involved in the message. Reductionist views of this sort leave one with the problem of how concepts come into existence, concepts different for each language and yet similar for each speaker of a given language. The point of view put forward here, that language provides both the means of representing and the means of expressing (hence communicating) what we want to say, supplies the necessary framework for relating individual experience to communicable conceptual units and thus can account for the existence of concepts.

This is not to imply that all the problems involved in language communication have been evoked, let alone solved. Once the operational dimension of language has been examined from the point of view of the speaker, it remains, in good methodology, to examine it from the point of view of the hearer. For the hearer, it is no longer a matter of abstracting conceptual units from an individual experience, but just the reverse: trying to derive the particular experience of the speaker from the sentence meaning just expressed. And since that meaning is never a photocopy of the original, the distance separating the two calls for the hearer to interpret the sentence meaning in the light of the situation, para-linguistic signs, previously acquired knowledge — anything in fact that may hint at what the speaker has in mind. In short, the whole area of pragmatics is involved here, with the delicate and difficult task of determining what is properly linguistic and what is not, of discerning the limits of language.

The approach developed above throws light on another important question in linguistic discussion: the complex problem of the referent. A tendency among linguists and others to consider language a self-contained system cut off from external reality with all its quirks and idiosyncracies has led to considerable discussion of what language refers to, of what it is we talk about. The position adopted here implies that the extra-linguistic, intended message constitutes the immediate referent to which an act of language must be incident if it is to tell us about anything outside of itself. Whether or not the particular experience talked about corresponds to something in extra-mental reality is a very different problem, one we as linguists are ill-equipped to analyze because it involves a

¹ This recalls the well known citation from John Locke:

The comfort and advantage of society not being to be had without communication of thoughts, it was necessary that man should find out some external sensible signs whereby those invisible ideas which his thoughts are made up of might be made known to others.

relationship quite outside the limits of language. As such this is not properly a problem for linguistics, so we can, fortunately, leave it others — logicians and psychologists, for example — who are better equipped to deal with it.

Our attempt to define the limits of language in its operational dimension has resulted in a clearer view of the relations between experience and language. It has shown that mental constructs like concepts, and indeed the whole of language, are ultimately drawn from our experience through a process of abstraction. This is, of course, an idea with a long tradition. The fact that so many linguists have lost sight of it and propose innate structures of all sorts to account for mental constructs is due to their restricted field of vision, not to the falsity of the idea that we learn from experience. Failure to trace the act of language to its starting point, where the putting together of words is undertaken, necessarily cuts language off from its beginnings in experience. And this, I would maintain, holds not only in synchrony for every act of language, and in acquiring one's mother tongue, but also in diachrony, throughout the long humanizing construction of the diverse languages we know today. Thus by implication, the point of view that language is the only means we have of forming conceptual units from our experience, of giving the momentary content of our stream of consciousness a certain stability by reducing the complex of impressions to pre-established categories, provides a plausible alternative to current doctrines of innatism. Not that merely adopting this point of view solves the problem of the concept, explains how we acquire the concepts of our language and how a concept is formed in the first place. To do this we must analyze the mechanism permitting us to form concepts, but to my knowledge nobody has yet managed to do this. Everyone is groping in the dark in this respect, but one thing remains clear: only those groping in the right place have a chance of finding what they are looking for.

CONCLUSION

The position presented above has been based on our experience of language with no explicit appeal to linguistic theory. Implicit throughout the discussion, however, are the views of Gustave Guillaume, whose pioneering work in exploring the operational dimension of language is as yet little known on this continent. He defines language functionally in terms of a series of three mutations converting what is in itself "unsayable" into "something said".¹ In the following passage, he goes on to describe the first of these mutations, the one we have been most concerned with here, dwelling more on the diachronic than we did above:

Let us now return to the first functional condition met by human language, the mutation of the unsayable into the sayable. We are all acquainted with it: we encounter it when we have to say something subtle, something hard to grasp in our minds. But in the structural history of language, the term *unsayable* applies to something other than what is difficult to express; it applies to what was *before* the sayable existed. What was *before* was human experience, the experience man had from his presence in the physical universe. This experience, because of its vastness, because of its incoherent diversity, because of its internal multiplicity, was not representable and hence not sayable. It belonged to the unsayable. Making it sayable meant resolving its incoherent diversity into series that lead, that converge into one and the same representation. It is easy to produce examples. Take the experience *tree*: this is a repeated, diverse, incoherent experience which, when seriated, leads to the representation *tree*, to making *tree* mentally sayable, and once a suitable sign is found, to making it orally sayable.

¹ Cf. Guillaume *Foundations for a Science of Language* (John Benjamins, Amsterdam and New York, 1984, pp. 135ff.)

Elsewhere¹ he expresses the same ideas more succinctly: he describes the act of language as a commuting of our momentary thought into speech. As such, language, for Guillaume, is an eminently human activity, man's means of reducing the turbulence of experiential thought to the relative stability of conceptual thought. In this way language holds a mirror up to experience, permitting reflection, which is our way of getting to know what we think.

Again this is by no means a new idea, and perhaps the final word should be left to the poets. One is reminded here of the reply a poet made when asked if he knew his meaning before he wrote a poem: "How can I know what I mean till I see what I say?" But surely the finest expression of this essentially humanizing role of language is provided by the unchallenged master of the English language when he has Prospero say to Caliban, the semi-human being:

I pitied thee,
Took pains to make thee speak, taught thee each hour
One thing or other: when thou didst not, savage,
Know thine own meaning, but wouldst gabble like
A thing most brutish, I endowed thy purposes
With words that made them known.

(*The Tempest* I, II, 353-358)

¹ Guillaume, ms. of the lecture for January 28, 1960, f. 2.

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INAUGURAL LECTURE

Systems of Simultaneous Awareness: Towards a "Musical Linguistics"

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0. Introduction

In the present paper I am raising a question of potentially great interest not only in Linguistics but in Psychology, Literature and Music as well: How do we humans do so many things **SIMULTANEOUSLY**? Some of the numerous complex things we do are carried out by the **human voice**; others by our **hands and feet**, others yet by our **eyes, ears, hands and feet** in an astonishingly rich display of what I propose to call **SATCOG**, the acronym for "The Simultaneous Awareness of Transmodal Cognition."

Obviously not all human events that somehow involve simultaneity and some greater or lesser degree of **awareness** of such simultaneity are of equal linguistic interest; yet Linguistics, as a science, can only gain in realism by coming to grips with multiple awareness and multiple coding.

In order to introduce the subject from the more familiar sides of every-day life, I would like to present some well-known non-linguistic examples:

0.1 Some Non-Linguistic Examples

A person is driving a car. He has a passenger beside him. He must watch the road; the lights, and the oncoming traffic as well as cars that pass him, pedestrian crossings, motorcycles, trucks and cyclists. The driver may be smoking and conducting an important business discussion with the passenger. The car in question, if it is a standard gear-shift car, is equipped with a clutch beside the breaks and the accelerator pedal forcing the driver to use the clutch whenever shifting gears.

A radio or a tape player may also be on in the car; the radio may give an exact time signal prompting the driver to look at his watch while paying various degrees of attention to all the other things he must do in this particular situation. Probably his main attention will

be on the business transaction which the two happen to be discussing in the car; most of the driving will be done semi-automatically.

While talking to the passenger in the side-seat about the business at hand, the driver may also slip in an occasional word about the weather, the passenger's comfort, or the road conditions.

A typist, who is skilled in touch-typing, is listening to the evening news on television or radio while finishing up a piece of work at home. Her son walks in the door and is asking for his dinner. Without stopping, she tells him where in the refrigerator he can find it and carries right on with the sentence she is on. She is interrupted by a phone call. She answers the call, picks up the receiver and puts it to her right ear with a shoulder-rest, and then continues her work by allowing the typewriter to run out a paragraph which was previously corrected in the memory. She silently reads along the printed out text as she talks into the receiver of the telephone.

A pianist in a night club plays the piano and sings the lyrics; alternating between French and English; the night club is in Montréal and the code-switching in mid-song is meant to emphasize the bilingual cosmopolitan nature of the establishment. He also has a drink on top of his piano-bar and takes an occasional sip of it. Beside the piano there is a set of jazz drums which he operates with his feet when he decides not to use them to manipulate the soft and "hold" pedals of the piano itself. While engaged in all these activities he also manages to shift the quality of his voice from ordinary singing voice to the typical bar-singers half-spoken half-sung *parlando* mode. A waiter comes up to him and asks a question: without stopping the music he listens to the waiter's question, understands it and gives a reply to it.

A mother, while cooking dinner in the kitchen and watching the evening news on a small TV set on the kitchen counter, answers a phone call while helping her daughter solve an 8th grade math problem.

All of these examples come from my personal observations of real individuals.

0.1.1 Some Every-day Household Items that Feature "SIMUL-AWARENESS"

The most obvious example known by most people is the

common telephone dial, whether touch-tone or old-fashioned, whose numberes are simul-coded with triads of the letters of the alphabet. Modern touch-tone dials also have extra buttons marked by 0 for "Operator", * and # for certain types of banking and international dialing purposes.

Multi-purpose buttons abound on most modern typewriters and are also found on microwave ovens, washing and drying machines, kitchen appliances of various sorts, etc. On the average modern typewriter upper and lower key function sit on the same button and are distinguished by the use of the **SHIFT**-key; numbers and other symbols usually sit together on the keys of the top row; word-processor typewriters of various vintages and models all have multi-function keys, some for **bold face** printing, some for underlining, and so forth.

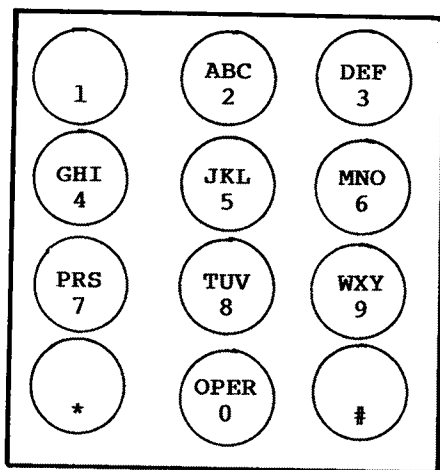


FIGURE 1

A Typical touch-tone telephone dialing system

Notice the absence of the letters Q and Z. The Arrangement may be circular, oval, or square. The actual telephone in question does not have to be a touch-tone system phone in order to have the double-coding of letters and numbers. Old-fashioned circular dialing phones in North America had double coding; telephone numbers used to begin with a word such as **UN**(iversity)6-4343, and the like. In many parts of the world 7-digit dialing is just now being gradually introduced.

Some people have been known deliberately to ask for telephone numbers which, due to the double-coding of numbers and letters, create English words that help people to remember the given number more readily. Such **MNEMONIC TELEPHONE NUMBERS** cost a little more in some States, and are free in others; from a sociological point of view they resemble "vanity licence plates" on cars. Some are used by businesses, as the examples below from Chicago indicate:

C A R P E T S = 227-7387

W H I S K E Y = 944-7539

T I C K E T S = 842-5387

Public information may use such as these:

W E A T H E R = 932-8437

H I G H W A Y = 444-4929

Playful individuals (some of them linguists) may use the mnemonic telephone number for their home, summer cottage or University office, as did J.R. "Haj" Ross in Massachusetts, in the Area Code 617:

D U M B H U T = 386-3488

T R U E A L P = 878-3257

A L E F A C T = 253-3228

The first one was the home, the second his summer cottage, and the third his office at M.I.T. I have no way of knowing if our brilliant colleague wanted to indicate that there was something "dumb" about his primary abode; that the summer cottage may have reminded him of "true Alps" may be understandable, and as to whether or not his office at M.I.T. was as intoxicating to him as massive consumption of "ale" can in "fact" do, is anybody's guess.

Notice, by the way, that these numbers have a rather simple "syntax" with only a couple of "constraints on variables": only 7-letter words can be used and the letters Q and Z are not in the "lexicon". The "grammar" is provided by the buttons 2 through 9; but 1 is not simul-codable with any letter and the non-digital buttons marked *, # and 0 for "Operator" are not available as alphabet-unit carriers.

The international electronics industry has created a number of different types of musical key-boards and music synthesizers whose most striking common feature is the multiplicity of available instrument voices upon the

touch of a button. I will return to the various **SIMULTANEITY FUNCTIONS** of the typical musical keyboard in the main section on music.

Whatever the nature and use of similar household items, it is obvious that modern industry has recognized the need and appeal of such products. It may argued, of course, that it is modern industry that creates the need for these items. One can only guess what kind of plays Shakespeare would have written on a word-processor and what kind of music Mozart would have composed on the **YAMAHA SY-77** music synthesizer. Basically, however, industry imitates, albeit in a redundantly amplified way, the nature-given, basic human habit of **SIMULTANEOUS AWARENESS** and **MULTIPLE CODING**.

0.1.1.1

In this section we will take a closer look at the letter-dialing capability of the now fairly common touch-tone dial phone. Figure 1 (above) presents this in simple tabular form. In the following **Figure 2**, this visual reproduction of the dialing system is expanded into a relational network sign pattern and a greatly oversimplified tactics. The relational network diagrams that follow throughout the rest of this paper are based on Lamb 1966, Lockwood 1972 and Makkai and Lockwood 1972 plus the cumulative stratificational literature that can be found in the **LACUS FORUM Series** starting with 1974 and continuing.

The arrow labelled 1 on Figure 2 (overleaf) indicates that the user of the mnemonic telephone number has a choice of lexemes (commonly thought of as 'words') in his memory; these will include the names of many items one may go shopping for to a supermarket. The tactic diamond which, on its other side, ties his inventory of words to their behavior is grammar (the second line to the upper right) leads to an 'ordered **OR** node' whose left line takes precedence over the right one. In this instance the left line leads the user to 8 triads of English alphabet letters, in fact the entire English alphabet with the exclusion of the letters **Q** and **Z**. The user knows, in other words, that (s)he can spell any word in English as long as it contains no **Q** or **Z**. The manner of spelling is up to the user: a pencil may be used, a blackboard, a set of alphabet blocks, a typewriter--literally anything. If this choice is not taken, the right hand line prevails: The user has chosen to 'spell by phoning' as it were. This line leads to the large triangle marked arrow No. 2. This is an 'ordered **AND** node' with seven lines leading to 8 appropriately

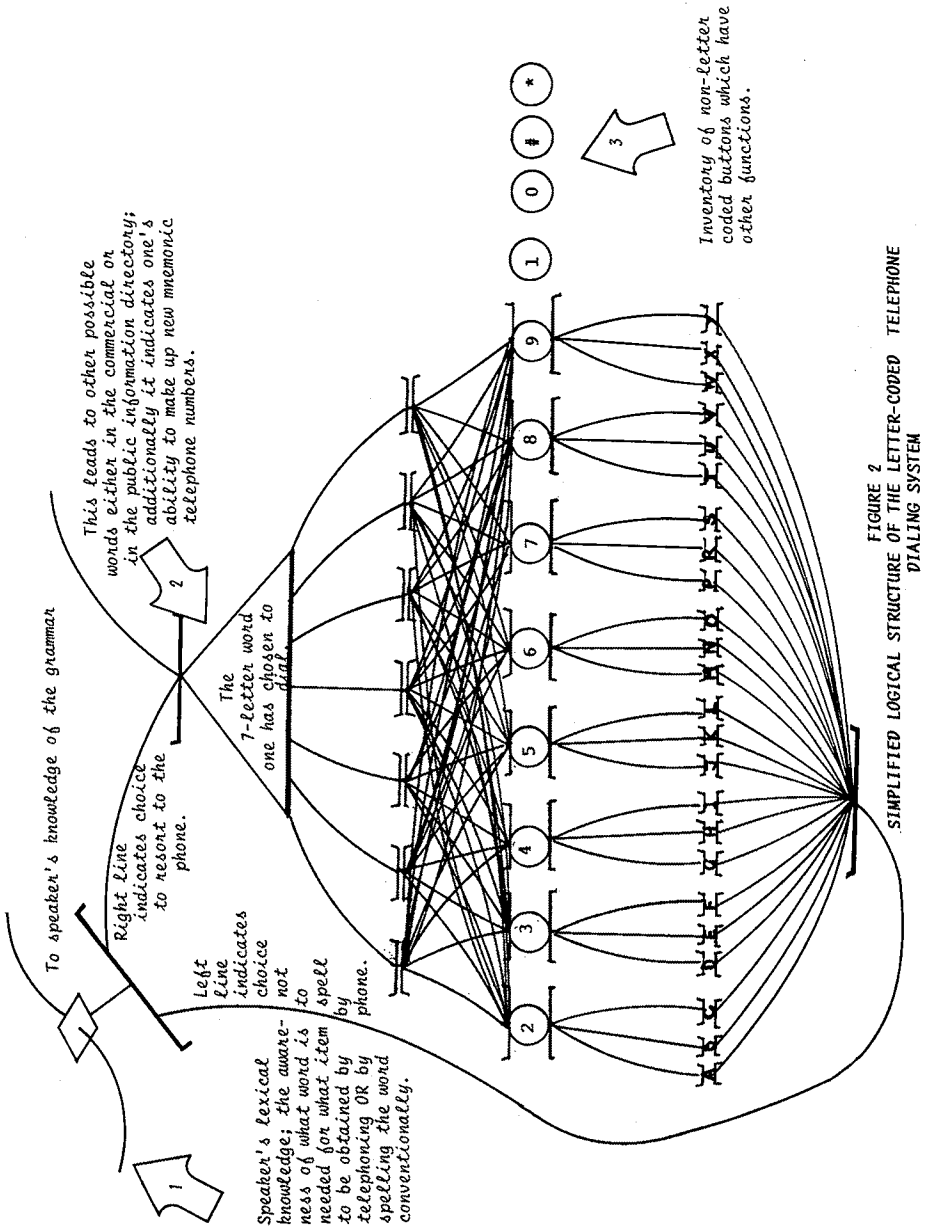


FIGURE 2
SIMPLIFIED LOGICAL STRUCTURE OF THE LETTER-CODED TELEPHONE DIALING SYSTEM

wired telephone buttons numbered 2 through 9, since 1 is left unused for multiple coding with letters and 0, left for 'Operator', is also left unused for double-coding with letters. Arrow No.3, lower in the lower right hand corner of the diagram shows these extra non-letter-coded buttons.

Arrow No.2 pointing at the large triangle indicates that the user may have many such 7-digit, letter-coded words/numbers in his directory; our examples above show several of these. As J.R. 'Haj' Ross' self-made mnemonic numbers show, these 'triangles' may be increased at will by designing one's own 7-digit number and then requesting it as one's actual phone number from the phone company for a surcharge. Once the letters have 'left the triangle', so to speak, their future place in the 7-digit line-up is no longer subject to the 'rules' (i.e. the 'orderedness') of the sponsoring triangle. A telephone number may theoretically begin with any digit and may end with any digit. In other words, every telephone number that is 7 digits long does, in effect, spell a 7-letter word whether that word is a recognizable English word or not. My present home phone is 649-1363, and with the letter-triads MNO, GHI, WXY, N/A, DEF, MNO, DEF one cannot quite make a decent 7-letter word because 1 is involved, which is not applicable. Word-fragments are, of course, always possible but according to our present 7-letter rule my present telephone number does not lend itself to being a mnemonic one.

If Figure 2 and the actually oversimplified relational network diagramming that accompanies it looks complicated, just think of the computational complexity of the telephone exchange of a medium-sized modern city of a million inhabitants, where there are, say, 500,000 telephones in use. With the extra features of long distance dialing, memory phones that retain up to 100 telephone numbers, the extra buttons # and * for banking and other special purposes, such computer-terminal hook-ups, you will agree that Figure 2 is a very humble exercise in industrial drawing.

1.A First Linguistic Approximation: The Simplified Structure of a Tongue-Twister

Let us focus our attention for a moment on a familiar English tongue-twister, the famous *Peter Piper picked a peck of pickled peppers*. Linguists seldom bother analyzing this as a sentence and understandably so, since it really doesn't say very much at all. Lexico-semantically it informs us that the individual called Peter Piper chose a certain jar that had some peppers inside it.

in it. A simple declarative sentence in the past tense, the tongue-twister offers nothing remarkable for grammatical analysis. For obvious reasons, it is remembered and fondly repeated by countless multitudes due to the difficult repetition of /p/ phonemes which, in word-initial position in English are heavily aspirated. **Peter Piper** thus makes excellent pronunciation drill material for foreigners who speak languages with unaspirated /p/ sounds. At the same time it is quite impossible to deny that the sentence **does** have a meaning of its own, a meaning which is easily arrived at by the compositional function of ordinary English syntax and the lexical semantics of the words in it. The question, really, is this: What part of **Peter Piper** do we pay more attention to? To the 'meaning' of this sentence, or to the machine-gun like repetition, and thus the difficulty, of the voiceless aspirated /p/-sounds? To answer the question favoring only the one side, say the lexico-grammar, against the other, is obviously just as arbitrary as denying that this tongue-twister also has a 'legal' meaning. We are thus faced with the necessity of **doing both things at once**: we may remind ourselves of the sentence's meaning **AND** we may concentrate on the difficulty of the /p/-sounds. The question arises: is our attention-span likely to extend to the lexico-grammar and the phonology evenly? Here, I think, we must admit that it is the nature of tongue-twisters that they call attention to themselves more by their phonologies than by what they say. As observed above, however, this does not in any way make it impossible for us to analyze tongue-twisters syntactically. Hence, in the upper right-hand corner of **Figure 3**, an unordered **AND-OR** node reminds us that we can turn our attention evenly, on a 50-50 basis to the meaning and the syntax and to the phonology, or that, alternatively, we can turn off the one line or the other entirely or to a considerable extent. **ATTENTION** in this sense, is comparable to a pocket flash-light: The larger the area it illuminates, the less sharp the illumination. We can turn our attention quite like a flash-light either toward the phonology or toward the lexico-grammar.

Our ability to do this is ultimately bound to the structure of the human brain. **Figure 4** shows in greatly simplified form the relationship of the human neo-cortex to that of mammals, amphibians, etc. The feature that sets the human neo-cortex aside from the rest of the animal kingdom is the large neo-cortex that balloons out to the left. This relatively young and extremely large neo-cortex is, furthermore, subject to **hemispheric lateralization**, a feature which has received much attention in the recent literature (Koestler 1967,

Janes 1979).

To paraphrase the latter, we have a situation roughly as follows: In right-handed individuals the **left hemisphere** is dominant, in left handed individuals, the right. The dominant hemisphere is like a 'computer' that calculates and plots the conscious activities we engage in such as counting, solving math problems, and a great deal of speech production and reception (i.e. **encoding** and **decoding**.) Psychologists are fond of comparing the dominant 'left hemisphere' to the more aggressive male temperament and to equate it with day-time consciousness. The more 'submissive' right hemisphere is said to be more 'feminine', given to dreaming. It is receptive to rhythm and tunes, degrees of loudness and non-rational free association. During sleep, it is believed, the 'right hemisphere' produces images and sensations such as floating in air without falling down which the rational left hemisphere's day-time consciousness would rule out as impossible.

It cannot be the task of the present study to evaluate on biological and physiological grounds the relative merits of the debate that rages around hemispheric lateralization. It may indeed turn out as many believe that what is currently attributed to hemispheric lateralization is, to a large extent, the result of social conventions. However this may be, the evidence I am trying to present here speaks for itself: People either pay attention to the way a **tongue-twister SOUNDS**, or they pay attention to its **syntax and lexical meaning**. Invariably, the 'meanings' and grammatical structures of tongue-twisters are somehow trivial, secondary, not very important, and the goal of the tongue-twister is to create difficulty in pronunciation. Some readers may object to my statement that tongue-twisters have a 'goal': This is not meant as a teleological statement but is a factual social observation: A good deal of human language, especially what we consider children's language, is not the main vehicle for the exchange of **goods and services**, but functions as a toy, a way to create **social amusement**. Whether social amusement is 'useful' or not is a secondary debate; my personal conviction is that everything nature endowed us with is 'useful' in a profound sense whether we can today convince ourselves of such usefulness or not. Sleep and dreams are also 'useful', since they bring about rest and recuperation. Surely, then, the **day-dream** and phenomena related to it are also 'useful' inasmuch as daydreams create periodic instances of rest.

The phenomenon of tongue-twisters --along with the related phenomenon of the 'nonsensical' nursery-rhyme - calls attention to an important aspect of second language learning. Adults over 21 years of age are known

to have more difficulty 'mastering a native-like accent' than children under 7 or 14. If it is true that hemispheric lateralization completes itself in stages roughly according to the metabolic cycle of 7-years, it makes sense to suppose that children under 7 'learn with **both hemispheres** unconsciously, as if 'taking language in by its sound'-- like imitating dance steps or humming a tune. That 14-year olds can easier imitate 7-year olds than can 21-year olds is easy to observe. If your job is to teach English to a 45-year old Chinese engineer, you will have maximum difficulty, since such individuals are unlikely to revert to childhood behavior willingly. Successful foreign language teachers testify unanimously that **songs, nursery rhymes, etc.** have a major facilitating effect on the overcoming of 'foreign accented speech'.

2. On the Sound and Sense of Acronyms

This study on simultaneous awareness would be incomplete without at least a glimpse at **acronymy**. The treatment will have to be brief as I have devoted a separate study to acronymy (Makkai 1974); readers interested in the stratificational diagramming of acronyms can take a look at this paper.

I will not discuss ordinary letter acronyms here, such as **AAA** for 'American Automobile Association' or 'American Association of Anthropologists' although interesting cognitive problems arise because of the ambiguities involved as well as the possibility of saying 'triple A'.

Acronymy becomes really interesting cognitively when the acronym discussed is a separate word that takes on a social life of its own such as **NASA, UNESCO**, and the like. The actual name in full length, e.g., 'National Aeronautics and Space Administration' and 'United Nations Educational Social and Cultural Organization' may temporarily escape the user when called upon to reproduce in full, or may even be totally unknown. Such **word acronyms** are, nevertheless, still not **punning acronyms**, and those are the ones that involve multiple awareness and multiple coding.

The acronyms **ASH, NOW, SWORD, PUSH** and **LACUS** all share in common the fact that they have been made up by people trying to convey two messages at once. The 'Association on Smoking and Health' deliberately created the acronym **ASH** so as to remind people that the end-product of cigarettes is ashes-- ashes, that is, which may also be the final shape of our abused lungs. The 'National Organization of Women' wanted, for obvious reasons, to emphasize the timeliness of their movement and the impatience connected with it, hence the punning

acronym **NOW**. A New York based organization for individuals who are 'Separated, Widowed or Divorced' appropriately calls itself **SWORD** since a sword 'cuts and severs', thereby describing the social status of the organization's members. The Rev. Jesse Jackson founded 'People United to Save Humanity' and called it **PUSH** in order to express the organization's desire to exert great energy and think less of politeness than of the results of expending great energy (even by being pushy.)

In describing such **punning acronyms** one has to keep in mind that they, too, could be called by their letter-spelling names; tush **PUSH** could be called the /piy+yuw+es+éyc/ (P.U.S.H.), but so calling it would rob the organization of the very 'push' it founders wanted it known for.

Another problem difficult to solve under standard structuralist assumptions was the morphemic status of forms such as **vet**, since it is the common acronym for **both** veteran and veterinarian. Is **vet**, then, one morpheme or two? In stratificational grammar the problem is avoided by **not** requiring morphemic signs to coincide with **Lexemes**, that is, that they should always have a unique meaning of their own. The form **vet** is a morphemic sign -- a syllable -- that happens to connect to **both** veteran, 'retired soldier', and to veterinarian, 'animal doctor'. That multiple awareness is at play is, I think, obvious to every one at this point.

In the name of our organization, **LACUS**, the inventor's (Prof. J. Peter Maher's) point was to indicate the geographical area of North America in which the organization is most active; and this happens to be the Great Lakes region. Since **LACUS** /la:cus/ means 'lake' in Latin, the acronym makes perfect sense.

Punning acronyms are probably made up by starting with the target-word, the acronym itself, and less frequently with the legal name of the organization it is supposed to represent. In other words, acronym-authors work as the tailor who first finds a shiny button in the street, falls in love with it and then proceeds to tailor a whole new coat to fit the button. This is perhaps not the most computationally economical way of going about it, but the human mind does not always choose the 'sensible' and the 'logical' solution to tasks at hand but prefers indulging in playfulness.

3. Deliberate and Accidental Punning

Just as **acronymy** is an integral part of 'multiple awareness' and 'double coding', so is **punning** in all of its forms. The topic is by no means new or unfamiliar, and so I will not devote an extended discussion to it here. Suffice it to say that punning is not always

N = Neo-Cortex
M = Meso-Cortex
A = Arche-Cortex

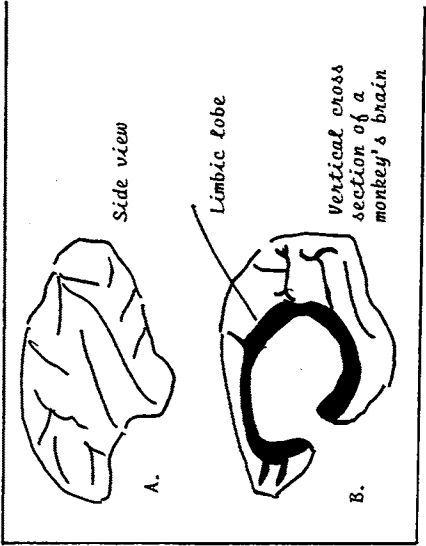
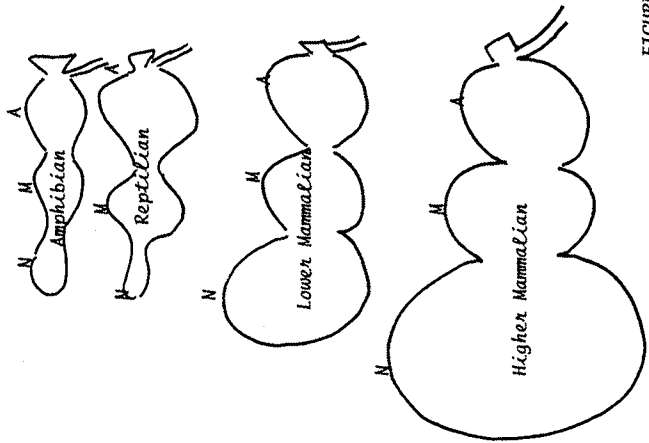
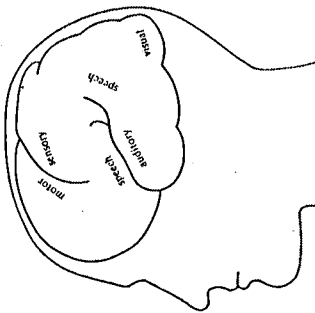
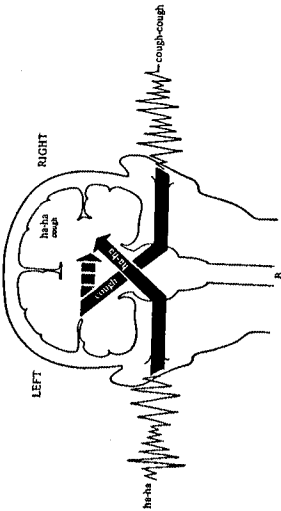


FIGURE 4: STAGES IN THE EVOLUTION OF BRAIN STRUCTURES FROM AMPHIBIAN TO HUMAN

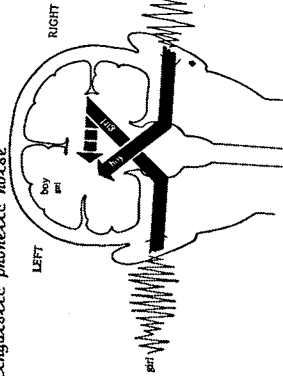
(After M. Maclean 1958, 1961, 1962 & 1964; redrawn from Koestler 1967.)



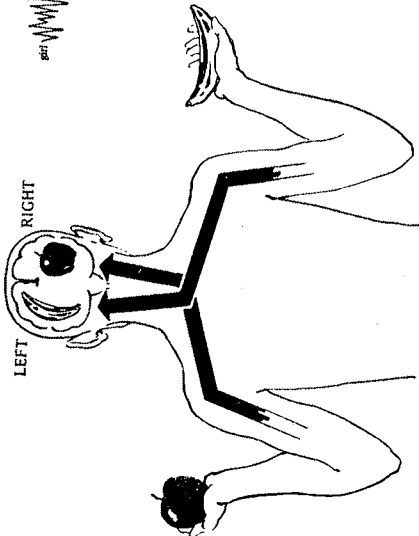
5/a: MAJOR AREAS IN THE LEFT HEMISPHERE



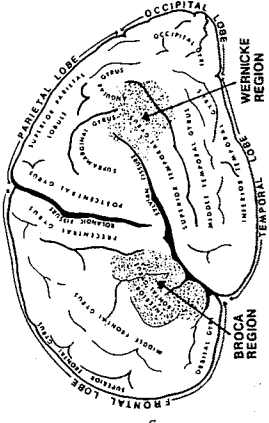
5/c: Right and left transposition of non-linguistic phonetic noise



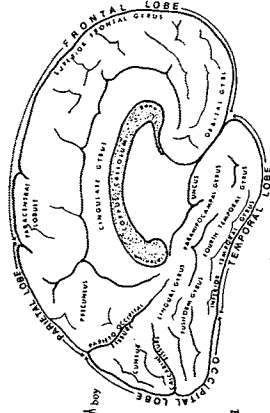
5/d: Right and left transposition of familiar English words



5/b: Right and left transposition of weight and touch



5/e: Lateral (external) view of the human left hemisphere. Broca and Wernicke areas relate to speech.



5/f: Internal view of the human left hemisphere. CORPUS CALLOSUM joins the structures of left and right hemispheres across the midline.

MAJOR HUMAN BRAIN STRUCTURES AND
HEMISPHERIC
LATERALIZATION AND TRANSFER

FIGURES 5/a, 5/b, 5/c, 5/d, 5/e and 5/f.

intentional. Formulaically, we have at least the following possibilities:

PUN INTENDED : PUN RECEIVED
 PUN INTENDED : PUN NOT RECEIVED
 PUN NOT INTENDED : PUN NOT RECEIVED
 PUN NOT INTENDED : YET PUN IS RECEIVED

Given these four alternatives the 'punster' must choose his audience carefully and be aware of the likelihood of success; indeed he must also know when to avoid puns altogether.

No matter how tempting a further exploration of puns and acronyms, I must not dwell on them here as they are by nature much more in the cognitive domain than in the auditive. In a future, more expanded treatment of the topic they will, of course, have to be included in full length and with many examples.

4. SUMMARY OF BIO-THEORETICAL PRELIMINARY OBSERVATIONS

The human brain is organized in a most complex way, as shown in Figures 4 and 5. Figure 4 shows the evolutionary history of the human brain in comparison to the *amphibian, reptilian, lower mammalian and higher mammalian* brain structures.

The human NEO CORTEX alone shows the extremely large ballooning effect that sets us humans aside from our fellow creatures.

This typically *human neo-cortex* is organized in two major hemispheres, the left and the right hemisphere. Objects held in our right hand register in the left hemisphere, and vice versa; nonlingual noise or recognizable words picked up by the right ear are registered in the left hemisphere, and vice versa.

It follows, therefore, that if a pianist is playing with both hands, the *TUNE*, played by the right hand, is 'driven' by the left, more dominant and more logical hemisphere, while the *ACCOMPANIMENT*, played by the left hand, is driven by the more rhythm and melody-oriented, more submissively 'feminine' right hemisphere.

No claim is made in this paper as to the ultimate validity or fallacy of the theory of hemispheric lateralization: It is merely used as one possible and altogether not implausible attempt at explaining what, on the other hand, is *observationally true and correct*: that human beings engage in activities that scatter their attentions in many directions. Scattered attention means that we have the ability deliberately to ignore some of what we are doing and/or to *emphasize* some other area of our activities. I call this *SATCOG*: or the 'Simultaneous Awareness of Transmodal Cognition'.

In the rest of this paper I will try to show that *metric versification* and the ability to *carry a tune* both depend on *SATCOG*. It will be further suggested that multi-voice instrumental music, choral singing, the sonata and the symphony would be impossible without *SATCOG*, our ability to do several things at

once with **DIRECTABLE** and **DIVIDED** ATTENTION.

MULTIPLE CODING is, I suggest, an **intrinsic** and **inescapable** part of all natural languages on Earth. The phenomenon is scandalously ill-explored and callously relegated to 'incidentals' whether in 'Pragmatics' or some other convenient garbage disposal system. As a result, traditional grammatical theory has been unable to deal with the semantics of **STRESS**, with **INTONATION CURVES** that go against the expected standard, and many other basic features of English and other languages.

Studies of **POETIC LANGUAGE** are altogether woefully inadequate as there is to this day no convincing study on why English metric versification has never really taken off as have its German and Hungarian counterparts. I will suggest below that this has to do with the fact that anglophones pay primary attention to **stress alone** while ignoring **syllable length**, the feature of **open** versus **closed** syllabicity.

It will be further suggested that **musicology**, in turn, also stands to benefit from an understanding of **SATCOG**.

5. THE CASE OF METRIC VERSIFICATION: 'MUSICAL LINGUISTICS' IN A CLASSICAL SETTING WITH ENGLISH IMITATIONS AND APPROXIMATIONS OF VARIOUS SUCCESS

In the East-Central European High School (Gimnázium) tradition **MEMORIZATION** used to be a mandatory feature. The debate still rages in Europe itself whether this was pedagogically sound or necessary: tempers flare on each side of the argument. I, for one, never resented memorization and even eagerly participated in contests that were held at the Gimnázium of the Hungarian Reformed Church in Budapest where I was in the Latin ("Humanities") division from age 11 to 17.

We memorized proverbs both in prose and in hexameter form; some proverbs were famous lines from Horace's *Ars Poetica* such as the two-line distych extolling the virtues of hard work in one's youth:

*Qi cupit optatam cursu contingere metam
Multa tulit fecitque puer: sudavit et alsit.*

('He who wishes to reach the desired goal by running, carried and did much as a boy---sweated and froze.')

Latin grammar was taught to us in terms of rhyming rules: To this day I cannot forget the Latin nouns ending in **-us** that are of the feminine gender: **idus, tribus, porticus, acus, manus et domus**. I admit in retrospect that this was not 'useful' in a direct sense; certainly less useful for Latin itself than knowing all the prepositions that took the accusative case: **ante, apud, ad, adversus, circum, circa, cis,**

extra, intra, iuxta, ob, post, praeter, supra, versus, ultra and trans... I am sure I missed some of them: I learned this 44 years ago along with a number of Aesop's Fables, and numerous lines by Ovid, Horace and others.

The famous **SAPPHIC meter**, named after its inventor, the Greek poetess Sappho, got registered in my memory at age 13 by this stanza by Horace:

*Integer vitae scelerisque purus
Non eget mauris iaculis neque arcu
Nec venenatis gravis sagittis
Phusce, pharetra.*

'One pure of sins and with a life of integrity does not need Moorish javelins, a bow, nor a quiver heavy with poisonous arrows, Oh Phuscus!')

The **ALCAEIC meter**, named after the Greek Alkaios, still rings in my mind by these four lines also by Horace:

*Eheu, fugaces Postume, Postume,
Labuntur anni; nec pietas moram
Rugis et instanti senectae
Adferet indomitaeque morti.*

'Alas, Oh Postumus, Oh Postumus, the fast running years (show that) piety won't bring a halt to wrinkles, instant old age, nor to untamable death' or: 'The years are running fast, and neither will piety bring a pause to wrinkles, instant old age, nor indomitable death.'

THE SAPPHIC STANZA IN PROSE LATIN:

Phusce! (Homo) sceleris purus et integer vitae non eget mauris iaculis neque arcu, nec gravis pharetra venenatis sagittis.

THE ALCAEIC STANZA IN PROSE LATIN:

Eheu, Postume, Postume, anni fugaces labuntur; nec adferet pietas moram rugis, senectae instanti, et morti indomitae.

The relevant metric systems are:

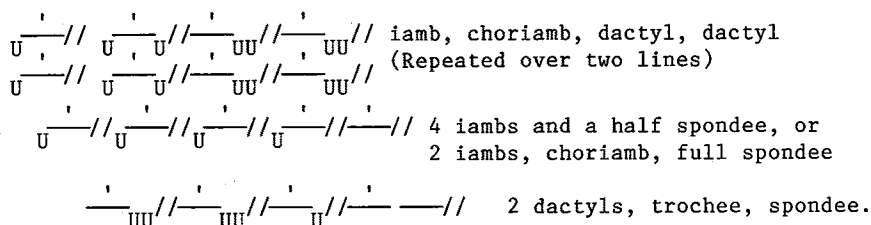
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two trochees, dactyl, trochee, spondee: This is repeated over 3 lines

CLOSING LINE:

dactyl, spondee.

METRIC SCHEME OF THE SAPPHIC STANZA



METRIC SCHEME OF THE ALCAEIC STANZA

This traditional way of representing meter is very much like writing music in the traditional way on the five familiar bars; the comparison is, of course, an imperfect one since tunes can be recognized even without words whereas metric skeletons without words are meaningless. I will have to return to this major difference between music writing and other notational modes in the section on music.

One way to test the usefulness and flexibility of a given mode of description is to see if it can give a reasonable representation of diverse cognitive phenomena. Lamb's **RELATIONAL NETWORK METHOD** has come in for much criticism for its complexity. Admittedly, it is difficult and demanding; logical clarity needs to be coupled with a certain amount of manual dexterity and visual aesthetics. Figure 6 overleaf gives such a relational network description of the six classical metric feet, the anapaest, the iamb, the choriamb, the trochee, the dactyl, and the spondee.

The description is based on the notion of the mora or basic unit of duration, as was originally done in Greek and Latin rhetoric. A 'half' mora, represented by the 'U' equals one mora by another count, and two such morae amount to a full mora, represented by --- .

The following Figures 6, 7a, 7b, 8, 9, 10 and 11 show in relational network format the metric structure of some of the best known stanza-types from classical Greek and Latin poetry. Figure 6 shows the basic feet of metric versification that build these stanzas by using the above-mentioned 'half' and 'full' mora as the basic building block of these metric feet. Figure 7 shows the structure of the familiar iambic pentameter: on the a side 'masculine' and the 'feminine' lines are treated as separate types, on side b they are integrated. Figure 8, based on trochees, iambs, dactyls, anapaests and the spondee shows the structure of the Sapphic stanza, while Figure 9, similarly organized, shows the Alcaic stanza. Figures 10 and 11 show the structure of two types of sonnet, the Italian or 'Petrarcan', and the 'Shakespearian'.

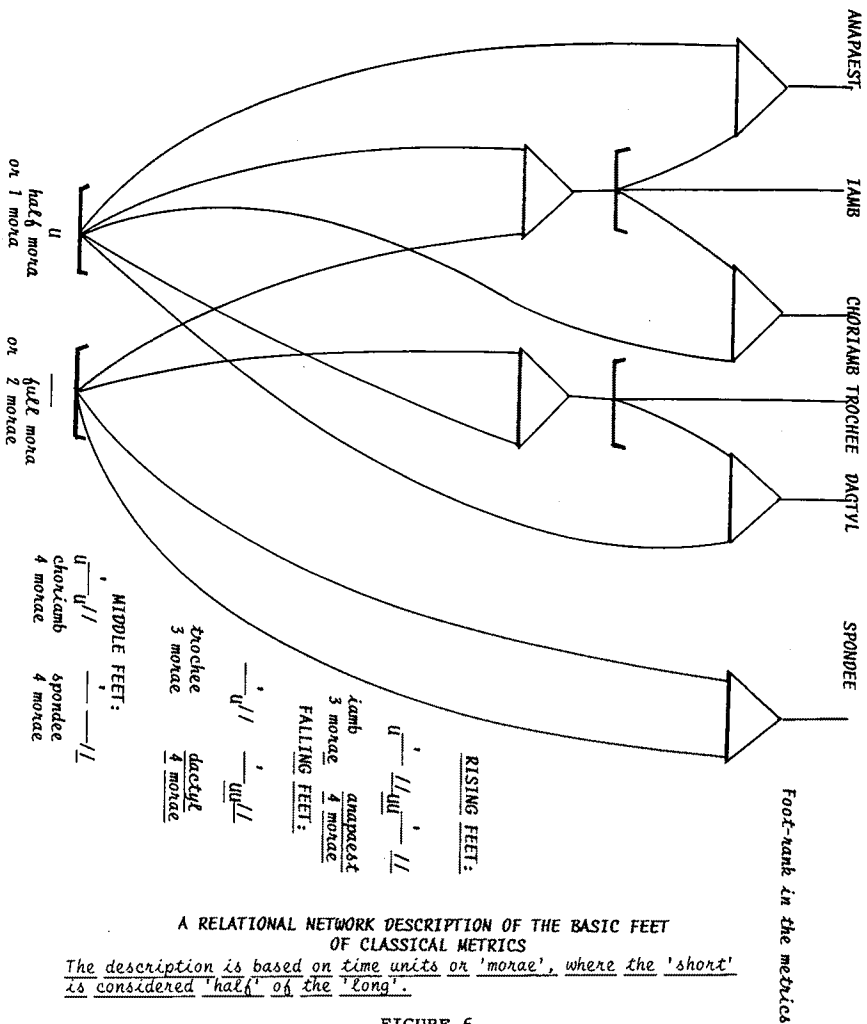


FIGURE 6

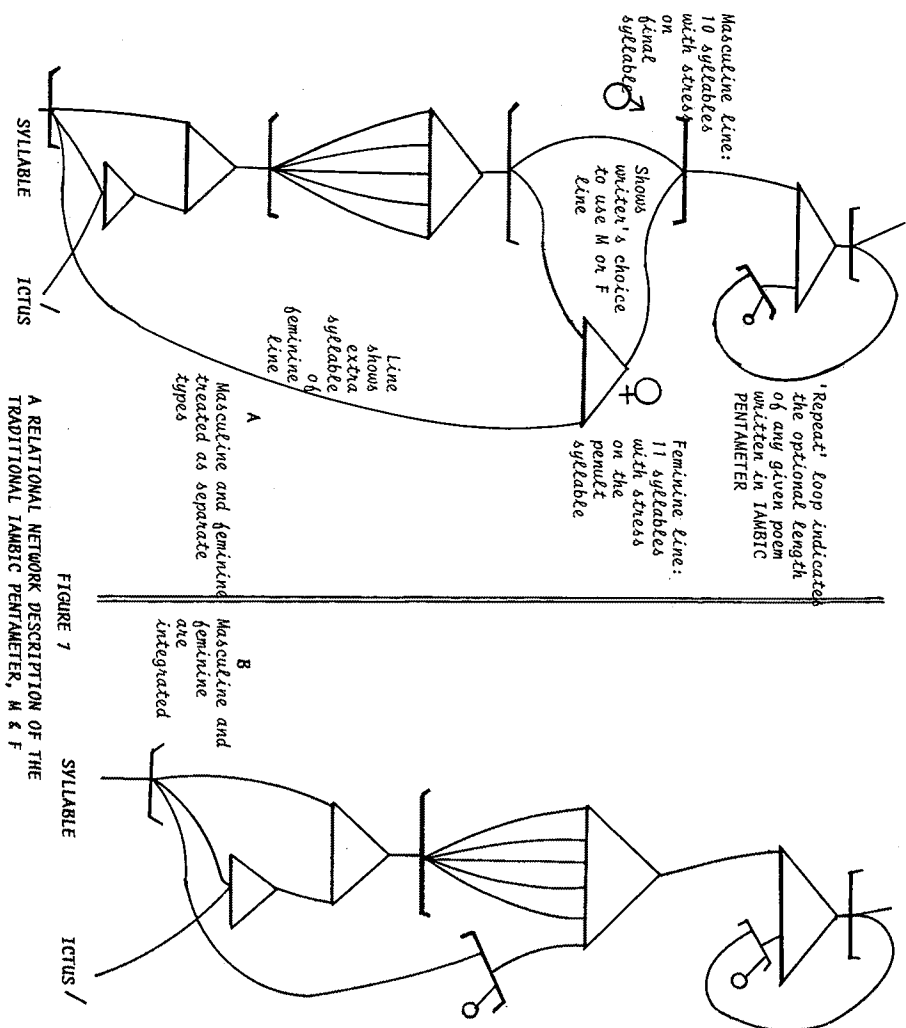


FIGURE 7
A RELATIONAL NETWORK DESCRIPTION OF THE
TRADITIONAL IAMBIC PENTAMETER, M & F

FIGURE 8
A RELATIONAL NETWORK DESCRIPTION OF THE SAPPHIC STANZA

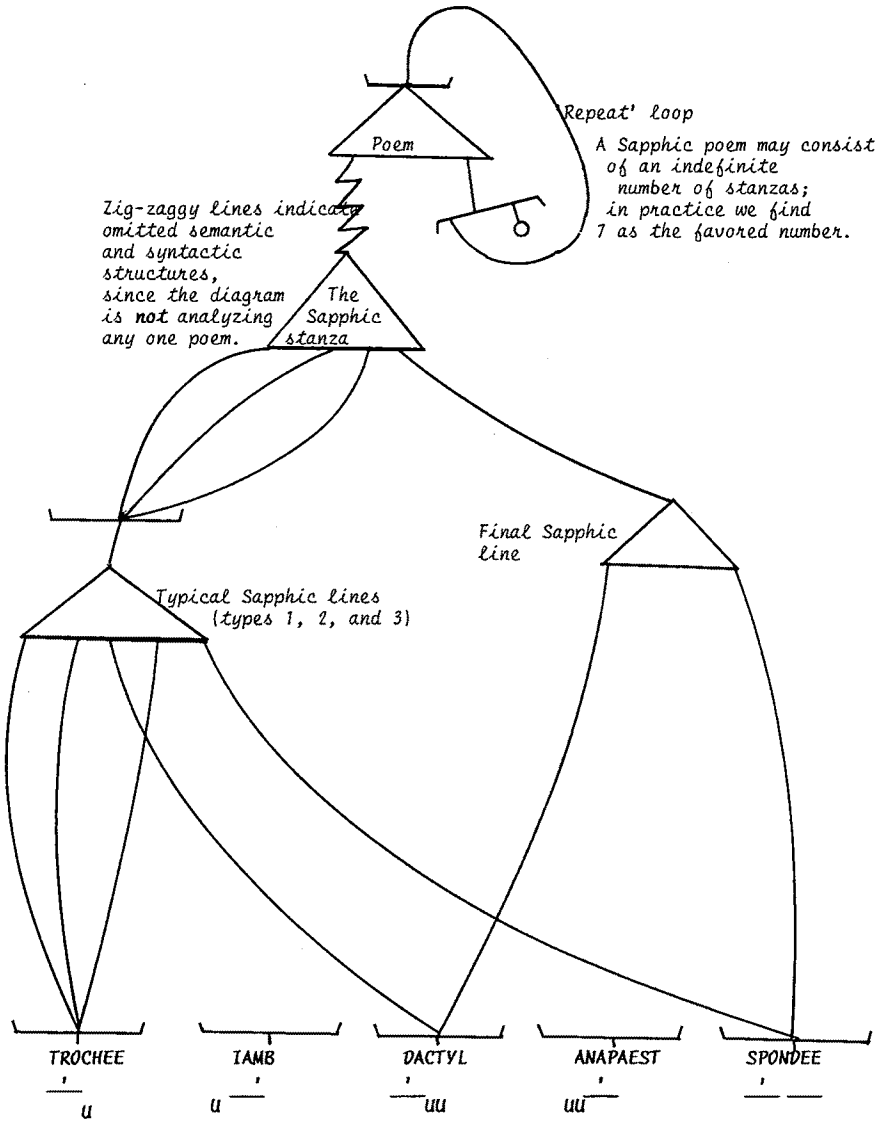


FIGURE 9
A RELATIONAL NETWORK DESCRIPTION
OF THE ALCAEIC STANZA

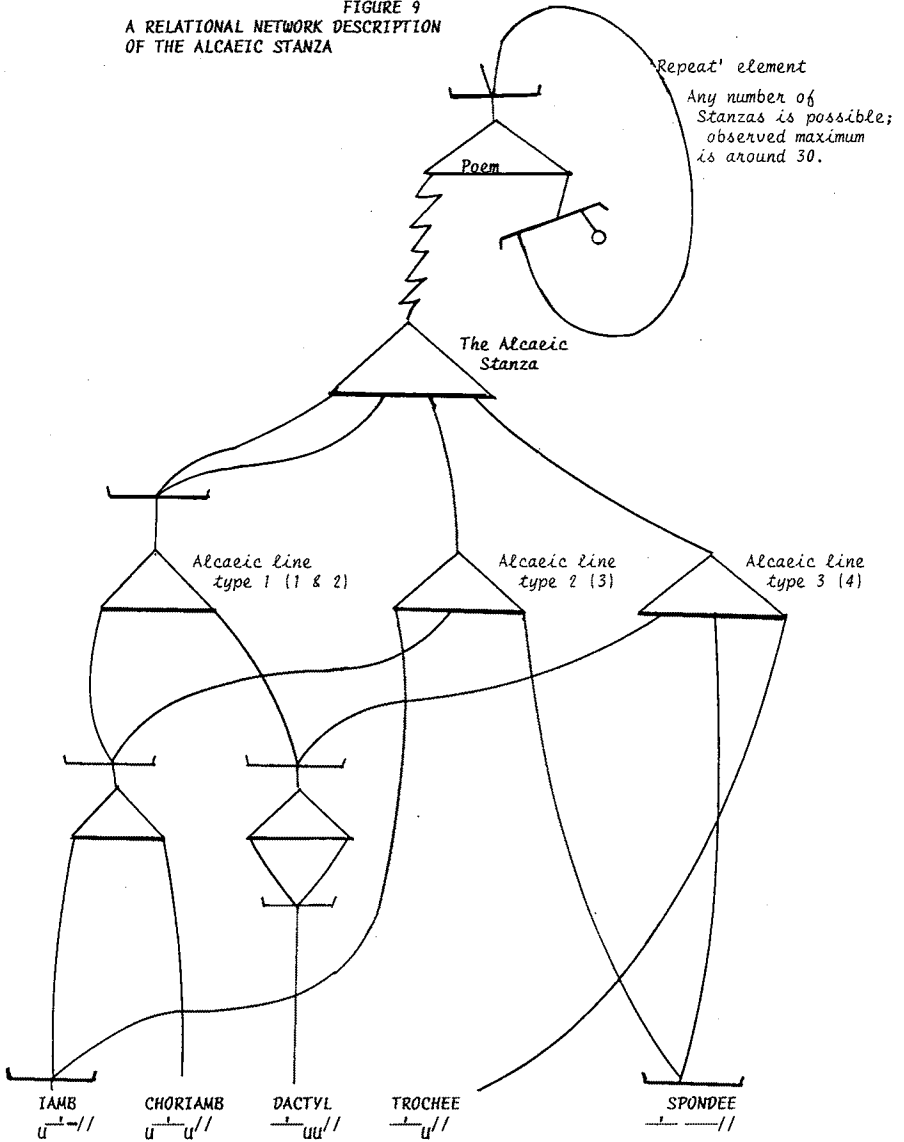


FIGURE 10
A RELATIONAL NETWORK DESCRIPTION OF THE ITALIAN or 'PETRARCAN' SONNET

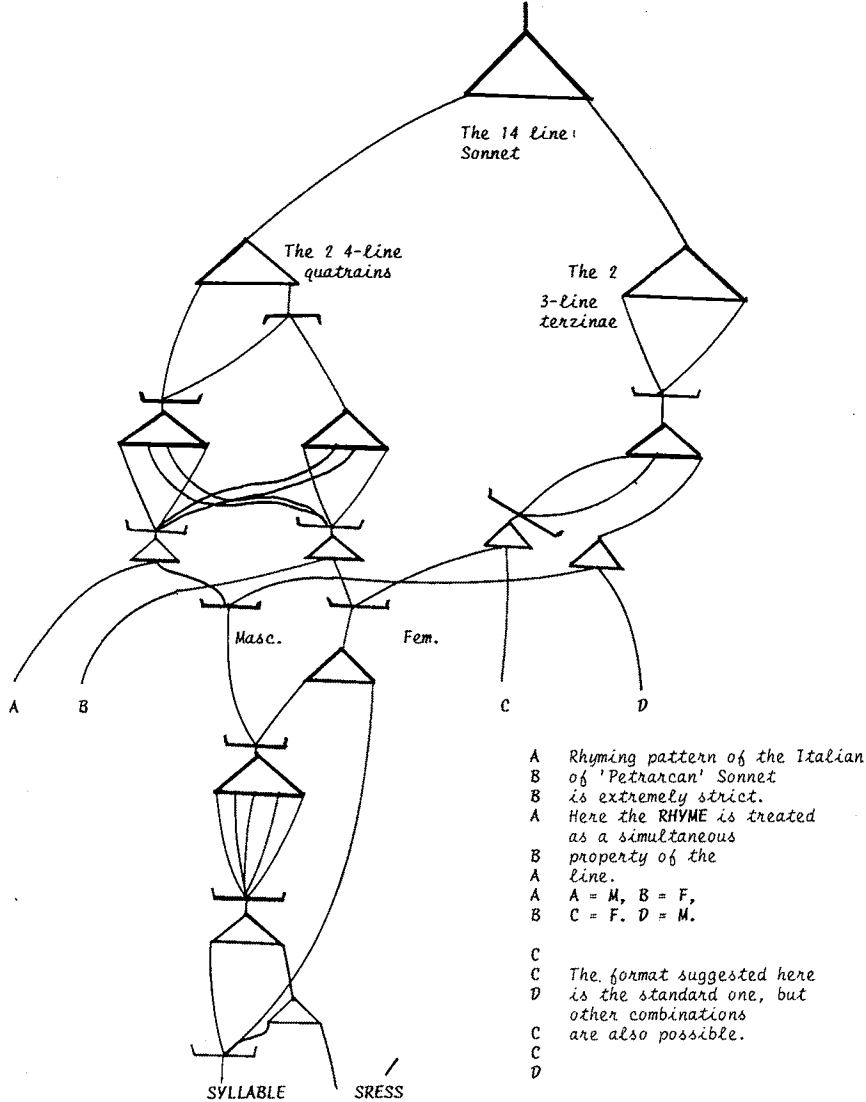
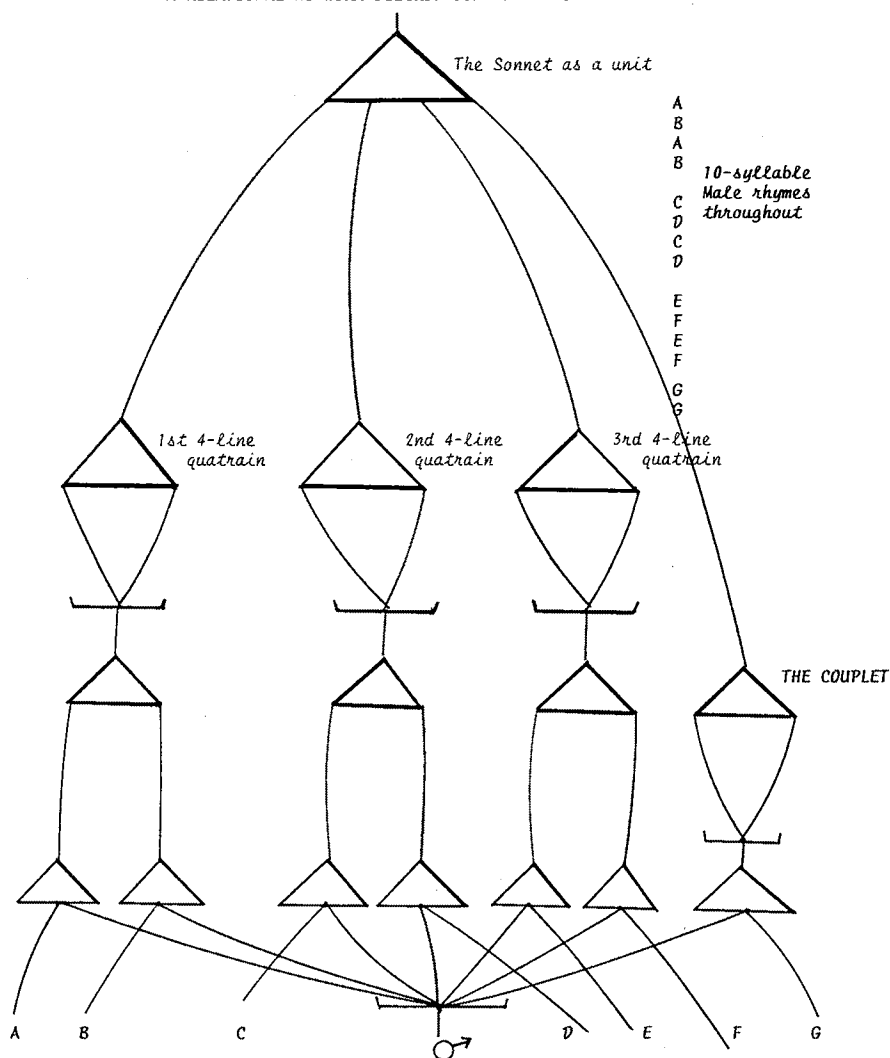


FIGURE 11
A RELATIONAL NETWORK DESCRIPTION OF THE SHAKESPEARIAN SONNET



If the **Figures 6-11** look somewhat forbidding, the reader should feel free to skip them altogether and concentrate on what they are intended to convey: The immense difficulty in wording one's message so that it makes sense, conveys a 'poetic atmosphere', and yet fully conforms to the rigid constraints of Greek and Latin metric versification. The German Hölderlin and the Hungarian Berzsenyi have produced a large number of excellent poems in these meters. English metric versification, on the other hand, is imperfect at best.

English has a **hammer-blow accent** that tends to obscure in native ears the difference between **open** and **closed syllables**. A syllable in Greek and Latin meter is considered **open** if it does not contain a consonant cluster and starts and ends with a vowel. A syllable may be long, of course, by virtue of containing a long vowel, such as **-ae-** in Latin. In the line by Horace:

IN-te GER-vi-TAE scele-RIS-que PU-rus

the syllables typed in capital letters are considered **both stressed and long**. The stress is obvious, the length **-to English ears-- is not**.

In the first word the cluster of /n+/t/ creates the length; /ger/, although not long in itself **becomes long** next to /v/, /ae/ is naturally long; /ris/ becomes long next to the /kw-/ of **que**, and the /pu-/ or 'purus' is naturally long. Can this be faithfully imitated in English? Endless generations of poets have tried in various ways and with various degrees of success. John F. Nims, the noted poet, former editor of **Poetry** and excellent translator of Horace allows himself a Sapphic 4th line that says **figure the hell with**; it is one of Horace's bawdy odes on commercial love (Nims 1980). What is wrong with this line? It is 5 syllables long as it should, and the **stress** is certainly in the right place. The problem is that he doesn't hear the lack of length in the word **figure**. **Finger** would be a lot better; why, we would have an /ng-g/ cluster; if this still sounds unconvincing try the 'blind words' **let me be wholesome**, or some such phrase. The lining of /t+/m/ between 'let' and 'me' creates the needed length; 'wholesome' has a naturally long /o/.

Being a non-native speaker of English, the temptation to write a 'perfect' Sapphic poem was dwarfed by my diffidence: How could I possibly succeed? After many years of hesitation, I finally tried.

The general technique I can suggest to any one interested in doing the same is to start saying meaningless words in a more or less random order paying minute attention, however, to whether they sound right or not. Certainly English stress placement must not be violated, but you must train your ears to **length**. I wrote:

**METRI(C)KS:
A SAPPHIC MEDITATION ON THE OPENNESS OR CLOSEDNESS
OF CERTAIN SYLLABLES
AND THE MOUTHS AND MINDS OF THOSE
WHO UTTERED THEM**

For M.A.K. Halliday

*Why should metric verse be a major problem
in such lovely speech as a "Standard English",
English clearly pronounced, perceived and spelled, that
nobody loses*

*slumber over? Why should a major master
--John F. Nims, Ralph Mills,, Teddy Hughes, Paul Carroll
Roethke, Lowell, Plath--what a list! It's endless!
limp to the rescue*

*minding only STRESS, never once perceiving
what there lurks inside in a Grecian stanza,
I mean LENGTH, where vowels hug a consonne cluster
multisyllabic?*

*English ears don't hear for a rhyme (nor reason!)
blind Love's labor lost on a line Alcaeic;
English lips won't say for a Pound (nor Dollar!)
SAPPHIC IS ALWAYS---*

*ancient Lesbos waits with a ruseful vengeance,
right inside your home, whether it's Manhattan,
rain-soaked London Town, chilly Leeds, Lancaster,
or sunny Sydney.*

*Upwards! Forwards! Run, run an Anglo gauntlet---
all our stress must roost in a cloak of timing---
no more pounds, no miles, not an ounce; no gallons:
life is a METRIC*

*SLAUGHTER-HOUSE OF SCALES: whether always open,
half-way closed, shut tight--- not an UNDERSTATEMENT
must escape untossed with a ten-foot pole of
high on a Sapphic!*

The poem was never intended as some kind of reprimand of American and British poets who mind only stress and ignore the length: What happened, in all probability, was what happens invariably when the mind grows half-way unconscious under the influence of a rhythm or a rhyme pattern and the 'meaning' of what is said gets adjusted to the dictates of the form.

That this particular Sapphic exercise should have turned into a minor lament against 'English ears and mouths' is a natural consequence of the topic; the long-awaited conversion of American miles, ounces and gallons to the metric system still years in the future seemed, in retrospect, as an appropriate coda to the fore-going remarks. I eventually dedicated the poem to M.A.K. Halliday who, as inventor/leader of Systemic-Functional Grammar is also known to be fond of the Classics and is a matchless phonologist.

But my task was not over: I needed to produce credible Alcaic verse as well. I wrote:

**THE KREMLAGON:
AN ALCAIC MEDITATION ON "BRAINS" versus "HEARTS"**

*We've lost the wager---nobody, nobody
can turn the clock back; crossing the "Rubicon"
the dye'd been cast and every player
is but a dot to emerge at random*

*whether 't 's a SIX, a FIVE, or a lonely ONE,
a DEUCE, a THREE; Ah! FOUR is a terrible
result: uncompromising anger
nobody knows where it incubated*

*before impacting here on an innocent
and softish ball with many a cavity
which hides inside the skull's enclosure
known as a BRAIN that is ours to garden...*

*Beware the brain! It's glued to a booby-trap!
Castrate the rogue! Get COMMISSURRECTOMY!
Go, scale the lobes from where the lowland
seems as a maze that, in awe, meanders*

*from LEFT to RIGHT and back: An ACCORDION,
whose sounds are muted, stuck in a medium,
whose only way of sound-emission
is the parade of a blind machine-gun.*

*For KILL we must; yes, nobody, nobody
can turn the years back; dropping the Atom Bomb
we "cast the dye" and every victim
was but a dot's billiard-statistics.*

*Beware the BRASS who sit in the KREMLAGON:
Arrest the chiefs who lavishly defecate
on every dream our softer hearts are
set to behold as a gift from Mozart.*

I was not trying to write a peace-poem that was even-handedly critical of the Americans and the Russians: the word **Kremlagon** just arose from the metric, quite unconsciously. It was already there as a metric unit when I realized that I had concocted a blend of the **Pentagon** and the **Kremlin**.

I distinctly remember that it was Horace's repetition of the vocative **Postume, Postume** that rhythmically suggested **nobody, nobody** to me; this repetition of a dactyl, on the other hand, aided by the word's lexical semantics, brought in a mood of doom and resignation. **Crossing the Rubicon** came to mind as yet another dactylic ending--since line 2 has to be identical with L/l and '**Rubicon**' as one is likely to remember from Caesar's life, means 'war'. The rest followed almost automatically. I was still under the influence of writing the Sapphic poem whose major thrust is about stress, length and reason, so the 'heart-brain' dichotomy was not at all an illogical or an unexpected one. **MOZART**, as the closing word of the poem was very well in keeping with my intentions of saying something about both music and language and, having somewhere in the back of my mind what I had said earlier about the brain, it made sense to accuse the 'brain' of aggressiveness ('war') and the 'heart' of being in tune with music, a gift from Mozart. The word **commissurrectomy** perhaps deserves brief comment: When a brain-damaged patient needs an operation to save his life, or an epileptic can no longer tolerate his **grands maux** seizures, a separation of the brain's two hemispheres is performed by a brain surgeon, known as a 'commissurrectomy', a cutting opn of the commissures. The word, with its two stresses, is a fortuitous instance of two dactyls and as such was not to be missed.

Interested readers who may wish to experiment with this mode of versification will also find that once they get into the mood of the rhythm, all sorts of associations become possible that would not surface to consciousness under other circumstances. I know of not one better or more modern statement about poetic language than the one made back in 1929 by László Németh, a Hungarian physician who, like Czekhov, gave up his medical practice and became a major writer. Németh is, alas, not translated into English although several of his novels have enjoyed great success in German translation. About the nature of poetic language he wrote (I am translating from Hungarian) in 1929:

Any one who has ever seriously wondered why it so difficult to become aware of the many facets of our own mental life, will sooner or later come to realize that the reason is this: language falsifies our thinking.

The very moment I say "**thinking**" I have falsified, because I have separated the content of the mental process from its emotional co-efficients. Such a separation, however, never really takes place in the Life of the Mind, since the two, "content" and "emotional co-efficients" are but the two qualities of the same process.

Even the expression "the two qualities" partitions and severs in the same way as my referring to "thinking" on the one hand and to "feeling" on the other. Language is like a butcher's knife: It is used to cut up things into chunks. We get so used to our own words that we re-project them onto the mental processes themselves and so we wind up by seeing "concepts" in the place of nouns, the joining of concepts in the place of verbs, and we look for "souvenirs" and "memories" in the place of ordinary past tense.

We believe that we think according to the Grammar--and Grammar is indeed a visualization of mental processes. Language itself, however, does **not illustrate, but merely alludes at thinking**. The same situation exists with logic: It never shows **how a truth was discovered**, only how it is to be communicated according to the prevailing conventions. **Nobody finds truths by pursuing logic and no one weaves his associations according to sentence patterns**. Language is a sign system standing in for thinking and it has no more to do with the processes of the human mind and soul than does any writing system with the live word. The word, formerly the slave of the mind, now captures and imprisons it just as certain lower animals encarcerate themselves in their own discarded and calcified secretions. The mind, however, is less satisfied with its jail than those lower life forms with their calcium prisons, and so it starts to protest time and again against the falsifications endured, and tries to reveal itself more deeply and with greater plasticity. **The name of this tragic and, in the final analysis, hopeless experiment, is: POETIC LANGUAGE**. The poet wishes to project his thoughts in all its shades, in its more profound essence; this is why he uses cunning and all sorts of tricks; this is why he twists and molds language, the lazy servant, so that it will proclaim the right of its master all the louder. **Paradoxically, poetic language is the more touching, the more it does away with conventional language, the more it sends to the reader the thought itself---or let us bravely call it the mental state of the author**. Poetic style is a mental state rendered palpable despite the language being used.

Later in the same essay Németh goes into detailed analysis of the effects of **metric constraints** on the unconscious of the poet. Although writing metric verse is like dancing in a straight-jacket, at the same time

the rhythm puts the semantics and the lexico-grammar 'to sleep', and as a result all sorts of associations start to surface that would otherwise, without the constraining of the meter, have remained underneath the surface.

I was most anxious to see if this is also true in the case of a sonnet. The Petrarchan, with which I have had some experience in Hungarian, seemed much too difficult for a beginner, so I opted to try my hand at a (formally) Shakespearean Sonnet. I wrote:

Profane Prayer for Health

*"Heavenly Father, who graciously assignest
our souls to one container lasting but one lifetime,
kindly permit me to state: mine ain't the finest,
in fact, sometimes I wonder if it's worth a bright dime.*

*I suffer insomnia, the runs, gout, constipation;
worry-transformations stomachic and spinal:
many a straightforward bathroom-visitation
threatens to tear me up; in fact, to be the final...*

*That this here hull o' dust hath zero trade-in value
I most humbly accept...Forgive my words informal...
What I must needs protest's: Why can't it function
/normal?!"*

And then He Spake: "Thou pleadest tough, I tell ya!

*If Thou wilt jog a mile a day and practice meditation,
to wholesome turds will I restore thy foul
/liquifecation!"*

I make no apology for the bawdy overtones of this sonnet; after all, it was only a metric experiment and as far as the content was concerned, I felt rather sure that with the sonnet being a somewhat tired, and over-worked form of lyric poetry in English, a different mode of playfulness, mixing the modern colloquial with certain King Jamesian forms would be a relief to some readers. The piece was later anthologized (Carroll Ed. 1979), with a fuller linguistic account of its composition process having been published in Ghadessy (Ed.) 1988 (Makkai 1988).

None of the three pieces of verse presented here amount to good poetry. Poetry, meter and rhyme schemes may or may not find one another in a given piece: neither metrics nor rhyming is any guarantee of success in poetry. Most modern poets, in fact, try to steer clear of ancient metrics and elaborate rhyming schemes such as the sonnet altogether. Logopoeia, 'painting by the word', has given way in modern poetry to imagopoeia,

and it will be some time yet before modern poets of major standing will return to classical meter and the sonnet, each for his or her own specific purpose.

My purpose in showing a Sapphic and an Alcaic poem followed by a 4-quatrain sonnet with a couplet ('Shakespearian') was to illustrate the relational network diagrams describing these metric and rhyming structures. In a fuller treatment, I would like to present improved English hexameter, imabic pentameter and other classical forms as well.

My point, to repeat, was simply this: In texts whose primary function is **not** logical communication, but 'musical language' that allows through the daydream-materials of the 'right hemisphere' which the left hemisphere would have filtered out and rejected, a subordination of **content** to **form** opens up unusual lines of associations which, in turn, color the content of the resultant piece in question.

6. TRYING TO GET CLOSE TO MUSIC: PITCH PATTERNS AND RHYTHM PATTERNS

One way to illustrate the heavily complex and multiply **stratified** nature of music is to take a familiar tune and play it to an audience ignoring all the customary rhythm patterns associated with the piece. Evening out everything into full notes or half notes and further ignoring all places where the usual melody gets faster, then slower again, louder and softer, has the desired effect of shocking every one present. The player must do violence to him/herself as well: This takes practice and is **not** a pleasurable activity.

The reverse can also be done: Take the familiar tune you will play with one finger at a piano, and give all the needed rhythm patterns; speed up where needed and slow down where necessary, but never change the pitch! Keep one finger firmly attached to one single note and play the whole song on that single note. Some of the most knowledgeable listeners who can be credited with knowing the piece you are trying to play will become nervous and resentful after a few seconds of this acoustic attack. It reminds most people of a novice trying to practice the Morse Code. I have done this now a few hundred times to audiences in many places and know what to expect.

I have chosen to do the famous Ode to Joy from Beethoven's IXth Symphony, because it is universally well known; it is short; it can be played with one finger in D Major starting on F# (or any other signature for that matter). The pitch sequences are: **mi, mi, fa, sol, sol, fa, mi, re, do, do, re, mi, mi, re, re; mi, mi**

fa, sol, sol, fa, mi, re, do, do, re, mi, re, do, do.
 Re, re, mi, do, re, mi, fa, mi, do, re, mi, fa, mi, re,
 do, re, sol; mi, mi, fa, sol, sol, fa, mi, re, do, do,
 re, mi, re, do, do.

If you are not familiar with 'solfeggio', you will have difficulty following this notation; taking the C Major scale as an example, the correspondences are:

C D E F G A H C

Do Re Mi Fa Sol La Ti Do

The Ode to Joy can, therefore, be also presented as E, E, F, G, G, F, E, D etc.

The audience reactions as well as the player's own violated intuition cried out for a rectification, a putting back together of what belongs together and what has been artificially picked apart during this brief experiment. By the time you play *Freude, schöner Götter Funke* in normal tempo and with the normal rhythm patterns, a sigh of relief will be heard from the audience. At the same time you will become aware of the fact that just in order to carry a simple tune, you had to do several things at once. You had to pay attention to the pitch alternations -- the raw material for the 'melody' -- but this, you now realize, comes inextricably interwoven with a rhythm and stress ('musical ictus') pattern which is intrinsic to the melody. In a sense, it is harder to pick the 'melody' and the 'rhythm' apart for artificial demonstration purposes than it is to remember them as a unit and so to perform them, the value of the picking apart is precisely the fact that after having done so you will come to realize that when you play, hum or sing a simple unaccompanied tune, you really are doing several things at once. I am not suggesting at all that we learn songs (a) by their pitch alternations first and then (b) proceed to add the rhythm to them or vice versa; on the contrary; such a learning or listening procedure would be most counter-intuitive. Yet the nature of music-writing itself is such that (a) the location of the notes on the bars, together with the signature, gives the 'melody', the length-value of the note, full, half, quarter, eighth, sixteenth, etc., plus whatever dots are added for syncopation, indicate the rhythm. Sheet music, in fact, gives these things to us as *Gestalten*, units which we recognize and play. But just as it is possible to remove the rhythm notations from notes on the bars and leave just the bare outline of the melody, so can you at the keyboard play only the pitch-variations and equalize the rhythm to every one's pain and discomfort.

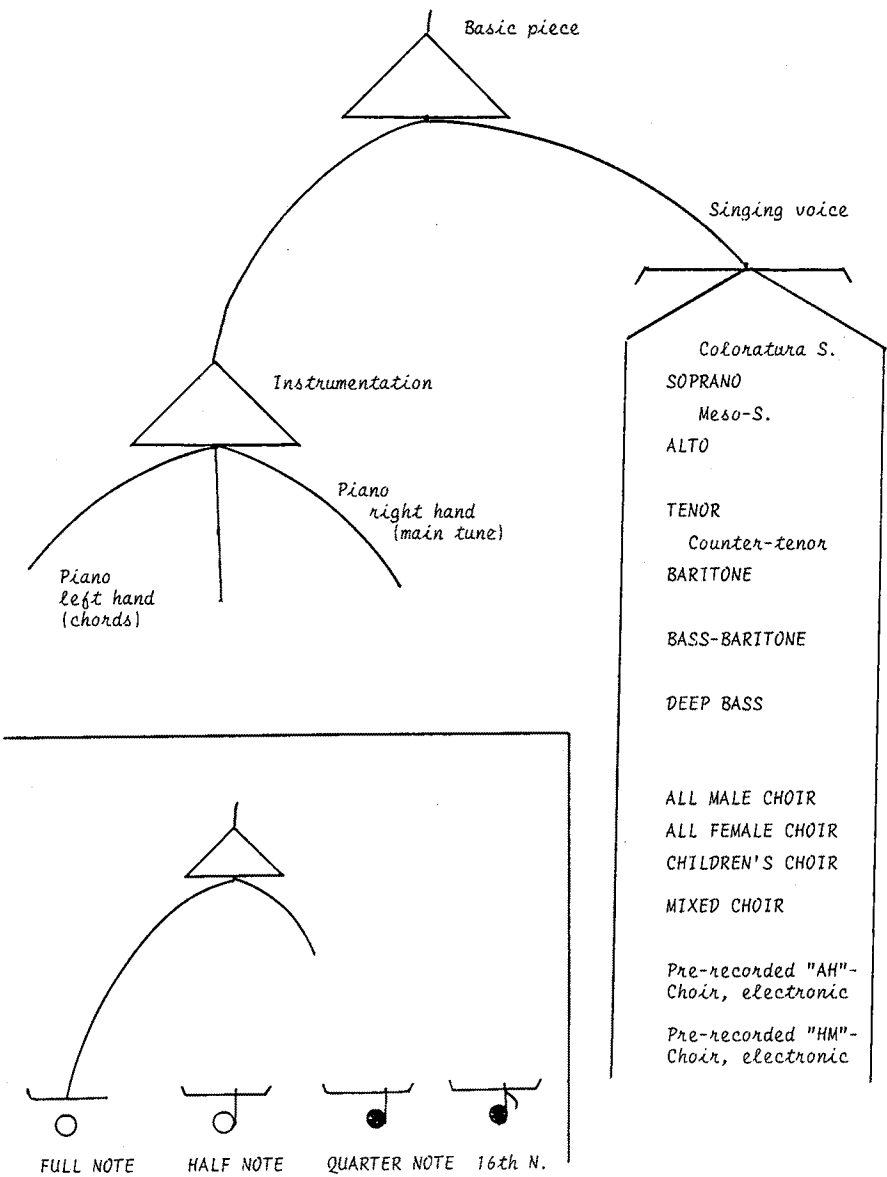
In what follows, I will try to give a quasi-linguistic description of the events that lead from one's recognition that it was the "Ode to Joy" from Beethoven's IXth that has been plaid to one's ability to account in detail of **what it is we do** when we produce/perform the melody ourselves either by humming it, singing it, or playing it on a piano with one finger, two hands, or full accompaniment.

Figure 12 is a general chart of a music performance in general: The top triangle indicated the Basic Piece, in this case the "Ode to Joy". It is an "Onordered **AND**" indicating that singing voice and instrumentation coincide in time as the performance progresses. The instrumentation (left hand "unordered **AND**") shows that the instrumentation itself is complex: the right hand may play the main tune alone; on the present diagram it is implied that it is accompanied by a chord-playing left hand. The singer may be a coloratura soprano or a meso soprano; an alto, a tenor, counter-tenor, etc., down to a deep bass; beside solo singing the Ode may be sung by a traditional mixed choir for 4 voices, or an all male choir, and all female choir, etc. This general scheme is valid for any other piece of music as well, e.g., the **Star-spangled Banner** or **I Was Working on the Railroad**, the piece in question does not have to be a revered classic.

Figure 13 shows the nature of the "Ode to Joy" in more detail: the left branch of the top "unordered **AND**" node leads to the possible languages in which the Ode can be sung. (In Figure 14, where the piece is given in regular sheet music, the text is written out in English, German and Hungarian.) The "unordered **OR**" node shows the choice of language; it also allows for simultaneous singing in more than one language. It happens rather frequently in opera houses all over the world that an invited star would sing in Italian while the rest of the cast sing in the local language. I have personally observed this happening at the Budapest opera house on a number of occasions when a visiting Yugoslav tenor would sing the lead-role of Aida in Italian while the rest of the cast sang everything in Hungarian translation. The phenomenon is an extreme case of *qui pro quo*, the operatic situation where two, three, maybe up to six characters all say their own words relating to the plot at hand in diverse ways while all harmonizing in the given musical setting; **duos, trios, quartets, quintets, sextets, even octets** are known in classical opera.

The text has a **rhyming scheme**, as indicated by the **ABAB CDCD** lettering under the second "ordered **AND**" triangle suspended under the "unordered **OR**". The singing of the text coincides with the **BASIC MELODY** which, in turn, coincides with the **INSTRUMENTAL** and the **CHORAL ACCOMPANIMENTS** as indicated by Beethoven's score.

FIGURE 12: SIMPLIFIED LOGICAL STRUCTURE
OF MUSICAL PERFORMANCES IN GENERAL



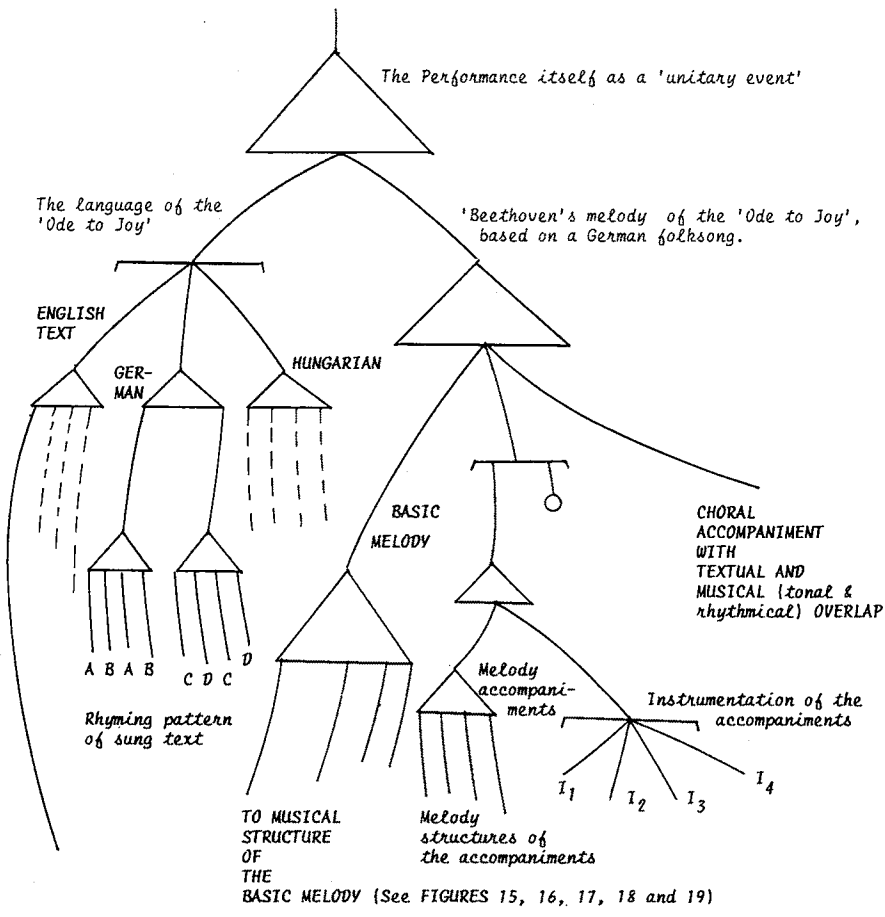


FIGURE 13
SIMPLIFIED LOGICAL STRUCTURE OF A PERFORMANCE OF THE "ODE TO JOY" FROM THE LAST MOVEMENT OF BEETHOVEN'S IXth (Choral) SYMPHONY in D-Minor

 E-flat Major



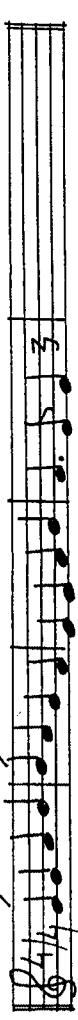
ENGLISH: Joyful joyful we adore Thee God of Glory Lord of Love,
 GERMAN: Freude schöner Götter Funke Tochter aus E-lyseum
 HUNGARIAN: Öröm büvös ég! szelena Elyzeum lány, te!



ENGLISH: Hearts unfold like flowers before opening to the Sun above.
 GERMAN: Wie betreten Himmelsthe, dein Heiligthum!
 HUNGARIAN: Akasztai lángot -ken vár hívóid szerege. szelena



ENGLISH: Melt the clouds of sin and sadness drive the dark of doubt away!
 GERMAN: Deine Tauben binden wieder was die Mole 'streng' geteilt,
 HUNGARIAN: Szellemek egybe fűzők földi gond mit szét szabit:



ENGLISH: Give of im-mortal gladness lead us to the light of day!
 GERMAN: alle Menschen werden Brüder wo dein sanfter Flügel weilt!
 HUNGARIAN: Minden ember testvér lesz ott hol lengnek szénpid!

FIGURE 14: "Ode to Joy" from Beethoven's IXth Symphony in traditional sheet-music notation, in E-flat Major

In **FIGURE 14** the tune of the "Odeto Joy" is written out in traditional sheet music. I have chosen to write it out in E-Flat Major for two reasons: First, I wanted to indicate that, given the assumptions of "solfeggio", DO is relative and, second, it simplified the music writing as G, the second line from the bottom, makes a convenient MI, the start of the song. The text appears underneath the bars in English, German and in Hungarian. Whereas the Hungarian text is a rather faithful translation of Schiller's original poem, the English text, which has become a religious hymn in its own right, is not a translation of Schiller's *An die Freude* in any sense, it is more a pastiche-like adaptation or a re-composition.

FIGURE 15 shows the logical structure of note-length in music in relational network format from the Full Note the the Half, Syncopated Half, Quarter, Eighth, Sixteenth and Siftifourth with a possible inclusion of the 1/128 note available on faster metronomes even if not too often used in reality. The reader is asked to turn the pages back to **FIGURE 6** where the basic feet of classical metrics were shown based on the notion of the Mora; here in music we have the same logical structure with the 1/64 note being viewable as the basic musical mora, multiples of which "generate" (or describe) the familiar notes of sheet-music.

Let us return now to the torture-session I described above in which a skilled player subjects an audience to the playing of the pitch-patterns of the "Ode to Joy" on even half notes or full notes omitting all rhythm and 'stress' indications. What would such a pitch-pattern look like in a relational network diagram? Could it be drawn? We can indeed play the "Ode to Joy" in such a rhythmless way and, therefore, this way of playing it can also be logically represented. **FIGURE 16** Gives the alternations of the pitches (ranging from lower Sol to Do, Re, Mi, Fa and Sol) The upper "ordered AND" node shows the 4 lines of the "Ode"; the "OR" nodes and Repeat elements added also appropriately indicate that in memory no new trace has to be engraved in order to reiterate the vocal chords and/or the hand to carry out the characteristic repetitions. This is a truly cumbersome way of reading music and no suggestion is made that we should abandon traditional sheet-music writing for relational network diagrams. By the same token it must be also be said that a melody is not registered in human memory in sheet-music notation form! Cumbersome, even awkward though the relational network diagram is, it does better justice to what is likely to be stored in human memory than any other notational system devised so far. Where an element is repeated, RN diagramming omits the repeated element and indicates

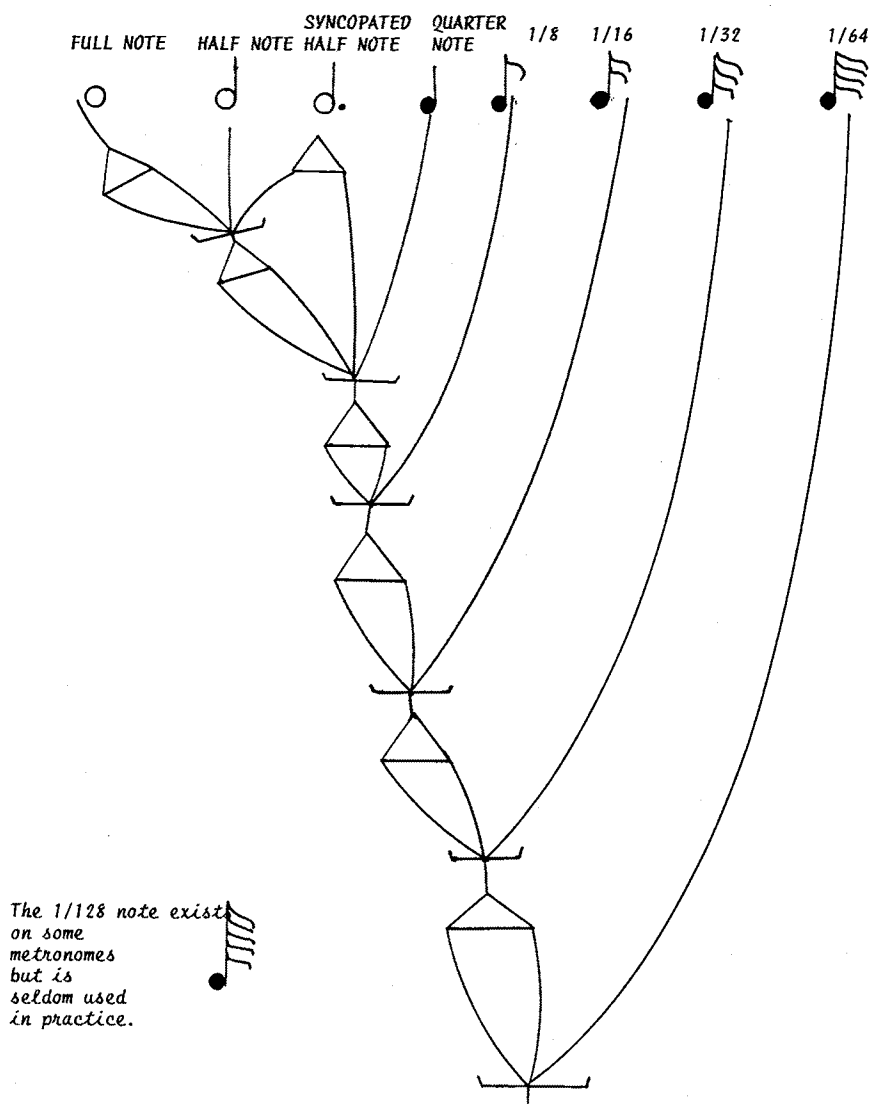
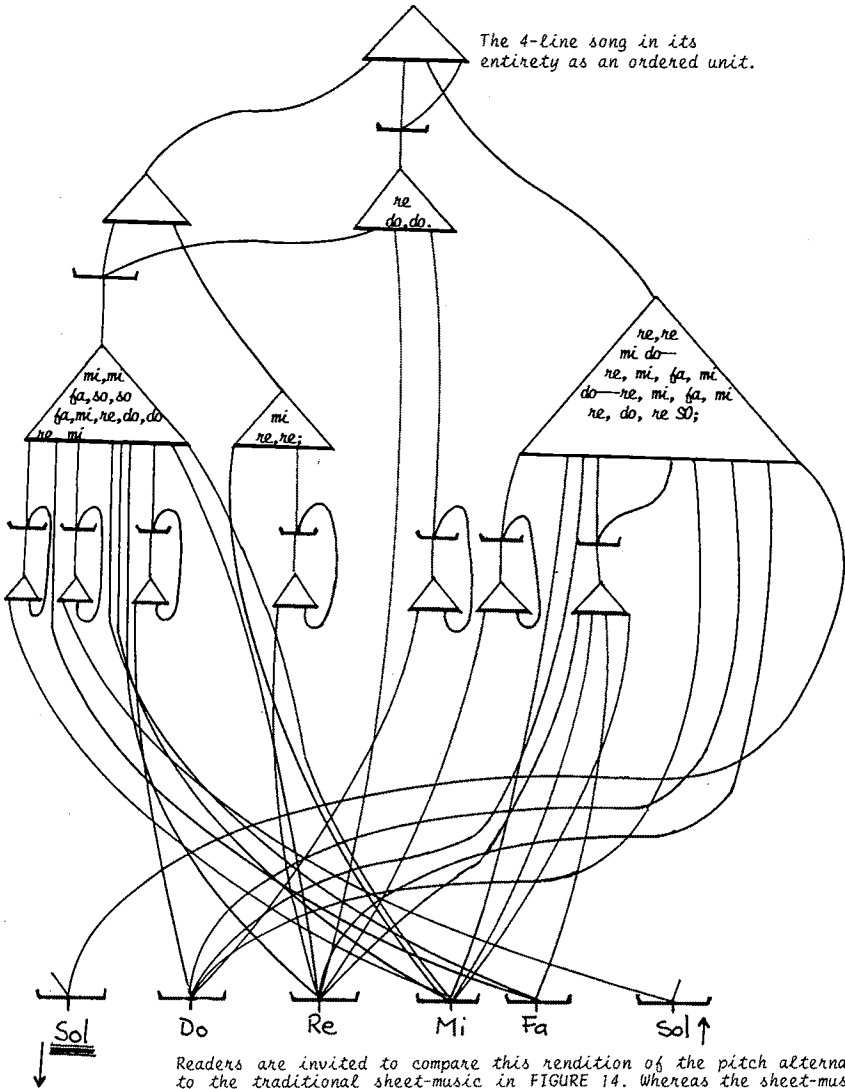


FIGURE 15: SIMPLIFIED LOGICAL STRUCTURE OF 'MUSICAL LENGTH' FROM THE FULL NOTE TO THE 128th NOTE IN A RELATIONAL NETWORK DESCRIPTION

FIGURE 16
THE PITCH-PATTERNS OF THE "ODE TO JOY" WITHOUT RHYTHM AND "ICTUS"



Readers are invited to compare this rendition of the pitch alternations to the traditional sheet-music in FIGURE 14. Whereas the sheet-music is easier to follow, it is full of redundancies handled here by the 'repeat loops'.

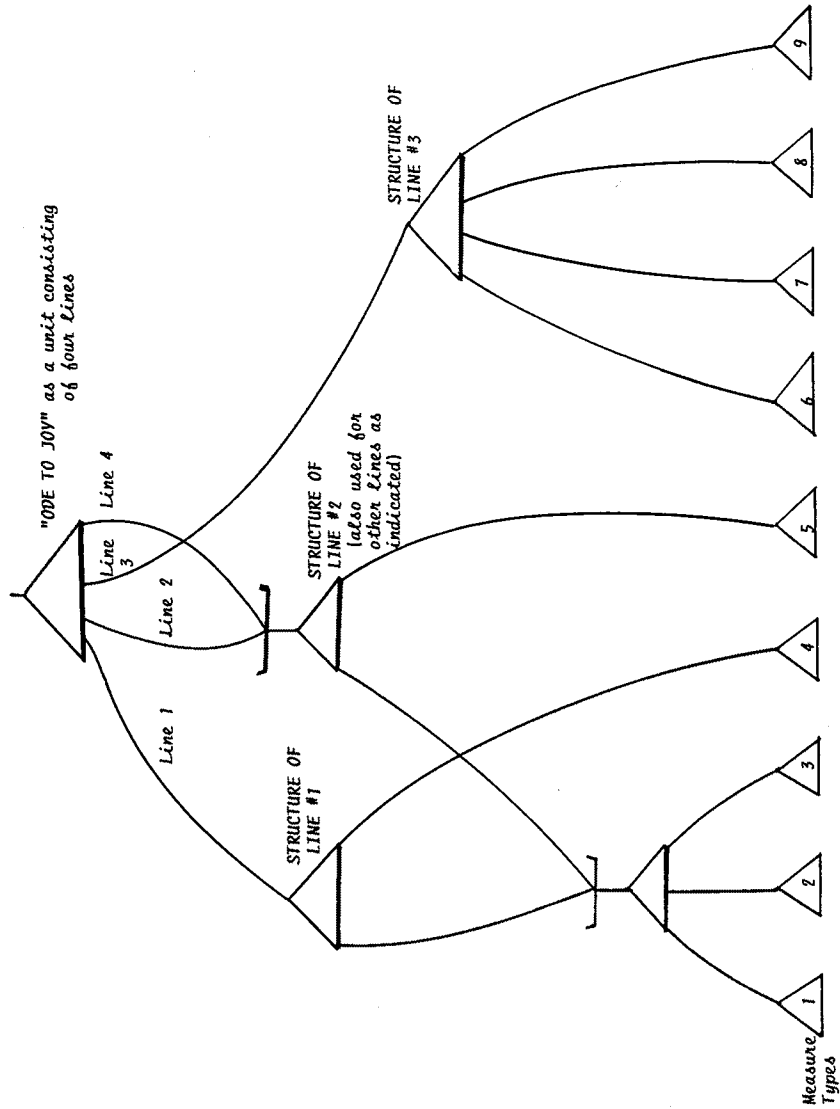


FIGURE 17

SIMPLIFIED LOGICAL STRUCTURE OF THE "UPPER QUASI-TRACE" OF THE "ODE TO JOY" LEADING TO THE MEASURE TYPES

where the new material starts.

As stated above, however, this description does not represent the true song, only its pitch-alternations. What we need is a more sophisticated diagram that is able to account for **both the rhythm patterns and the pitch alternations**. Hence **FIGURES 17 and 18** which are designed to accomplish that goal.

FIGURE 17 shows the "Upper Quasi-Trace" of the "Ode to Joy": The four line-poem set to four musical lines is describable in terms of 9 **measure types** (numbered 1-9 in the bottom triangles) which on **FIGURE 18** are shown to be "unordered **AND**" nodes, that lead to pitch-patterns (right hand side) and rhythm patterns (left hand side) **simultaneously**. Clearly **FIGURES 17 and 18** are equivalent to the traditional sheet-music notation (**FIGURE 14**), and the reader is invited to take a little time out and compare the two. The obvious advantage of the traditional sheet-music notation is that **pitch and rhythm** together with **musical stress** are all given together, in a **Gestalt**, and we are used to read music in this familiar form. The advantage of the RN diagrams, if any, is that like computer flow-charts, they take nothing for granted and therefore explain as **separate systems** that which we usually swallow as a ready-made entity. This has no aesthetic appeal for music publishers or for composers; my reason for converting traditional musical notation into RN is that the **basic cognitive similarity of music and language** could best be shows by a notationa system that can handle both. This notation system is the Relational Network method now in common use by cognitive linguists who have learned it from its inventor, Professor Sydney M. Lamb.

PRELIMINARY CONCLUSIONS BASED ON THE LOGIC OF "R.N."

If a notation system is sufficiently flexible to be able economically and logically to describe A TELEPHONE DIALING SYSTEM, a TONGUE-TWISTER, English metric versification with the relevant FEET; can give a coherent picture of the SAPPHTC, the ALCAEIC meter, IAMBIC PENTAMETER, two kinds of SONNET ('Petrarcan' and 'Shakespearian'); if, furthermore, the same system based on logic can describe the structure of a MUSICAL PERFORMANCE, the structure of a song by factoring out PITCH-PATTERNS and RHYTHM-PATTERNS, while also being able to show that certain portions of RHYMED LANGUAGE coincide in time with SOLO or ACCOMPANIED MUSIC, we must conclude that the system of description is **ADEQUATE TO THE COGNITIVE ORGANIZATION OF BOTH LANGUAGE AND MUSIC**.

This being the case, we can be reasonably optimistic of our chances of developing a cognitively adequate **MUSICAL LINGUISTICS**, a field of inquiry that can apply musical insights to language and linguistic insights to the description of music.

INVITED LECTURE

THE INTEGRATIONIST CRITIQUE OF ORTHODOX LINGUISTICS

Roy Harris

Universities of Oxford and Hong Kong

Introduction

The past ten years in linguistics have been marked by increasing scepticism concerning the theoretical foundations on which the majority of linguists have based their descriptions of languages for most of the present century. This critique can be traced back through Firth and Pike to Malinowski and Sapir, but has been significantly influenced more recently by the later work of Wittgenstein and by developments in sociology. The confrontation of theoretical positions involved has been characterized of late by contrasting 'segregational linguistics' with 'integrational linguistics'. What do these terms imply? Is this simply another difference between schools of linguistics (on a par, say, with that between stratificationists and glossematicians), or is it something which goes much deeper? Does it have implications for the future of linguistics itself?

Linguistics, conceived as an independent branch of academic study, embracing the entire range of observations and questions which relate to language, is a relatively recent development in the history of human culture. Its emergence in the particular form with which we are familiar owes much to the patterns of education and research characteristic of Western universities in the nineteenth and twentieth centuries. Linguistic theory has in large part been promoted by the perceived professional need to organize linguistic investigations in a coherent, comprehensive and principled way for academic purposes, rather than by the search for ultimate answers to the most general and far-reaching questions about language that a linguist might ask.

The most fundamental of these questions is 'What is language?'. As soon as it is asked linguistic theory already faces a problem of focus. For language involves at least three activities. It involves neural activity in the human brain. It involves muscular activity of the body. Third, it involves social activity of the kind which engages individuals interacting with one another. Different definitions of language interrelate these three activities in different ways, and imply different views of exactly which neural, muscular and social activities are involved. Furthermore, if language is viewed not as an activity at all but as a faculty or ability which underlies the activity and makes it possible, the dilemma of conflicting definitions simply reappears at one remove. For there is no way of identifying the language faculty without reference to the activity which it is alleged to sponsor.

The solution which has found favour with most theorists since 1900 is to focus neither on the faculty nor on the activity but on something else. The faculty is usually assumed to be universal in the sense of being common to the whole human race, in whatever stage or circumstances of cultural development its separate communities may be. The activity, on the other hand, is usually assumed to be activity carried on voluntarily by particular individuals responsible for their own linguistic behaviour. However, intermediate between the universal faculty and the individual activity there intervenes a third order of phenomena: there are said by the theorist to be systems shared by groups of individuals, but differing from one group to another. These systems, which determine within certain limits the form the activity takes in any particular instance, are languages.

By focussing on languages as systems, rather than on the language faculty in general, or on particular language activity, modern linguistic theory made it possible to reserve for linguists a domain of academic inquiry unlikely to suffer unduly from encroachment by the neighbouring disciplines of psychology, physiology and sociology. For language systems, so it was claimed, can be studied as autonomous objects without reference to the circumstances in which they function as means of communication. At the same time, linguistic theory neatly avoided the problem of defining language. Linguistics could proceed without resolving this problem, so long as languages rather than language were taken to be the primary object of investigation. The first theorist to make this strategy the explicit basis of a rationale for linguistics was the founder of the discipline in its orthodox twentieth-century form: Ferdinand de Saussure. To refer to this as the 'Saussurean strategy' carries no implication that it was confined to Saussure and the Geneva school. On the contrary, it came to be adopted by linguists of all schools, irrespective of their attitude towards other aspects of Saussurean theory.

Adoption of the Saussurean strategy, however, in turn posed a theoretical problem. Wherein resides the systematicity which languages as such are deemed to possess? The history of twentieth-century linguistic theory has been largely the history of two complementary but conflicting answers to this question. In what sense are languages systems? According to one thesis, the systematicity is internal, in that it lies, for each language, in the relations between the words of that language, their parts and their combinations. According to the other thesis, however, what may appear to be internal systematicity is externally derived from, and maintained by, the wider social practices in which language is involved.

A corollary of the first thesis is that linguistic signs are amenable to study in themselves, quite apart from their users and the contexts in which they are used. In this sense languages may be segregated or set apart from language, at least for purposes of academic investigation. A corollary of the alternative thesis, on the contrary, is that linguistic signs are intrinsically integrated into

other forms of behaviour, without reference to which they cannot even be identified, let alone studied, either by linguists or by anyone else. The terms 'segregational' versus 'integrational' capture this basic theoretical dichotomy.

It is the segregational perspective which has dominated academic language studies for most of the present century, and provided the theoretical guidelines for orthodox linguistics. All the major schools of linguistic theory, from Saussurean structuralism down to contemporary generativism, have been basically segregationalist in outlook. The integrational perspective, on the other hand, has received comparatively little theoretical elaboration, being favoured principally by linguists with strong inclinations towards anthropology and the study of language as part of the broader study of culture. Consequently there has been little in the way of theoretical confrontation between the two perspectives.

Moreover, at first sight, there appears to be no need for any such confrontation, since an attractive compromise seems to be readily available. This consists in recognizing a legitimate division of labour. Let segregational linguistics treat languages as autonomous systems, examine their internal relations, and perhaps speculate at a very abstract level about how such systems might be represented in the human brain, while integrational linguistics will concentrate on the external relations between languages and the individuals and communities using them. Unfortunately, the compromise is one-sided. In effect, it assigns to the integrationalist what is left over after the segregationalist has completed the central task of analysing the autonomous language system. Nevertheless, a compromise of this kind was accepted by many linguists whose theoretical leanings were integrational, and it was on this parlous compromise that the modern subdisciplines of sociolinguistics and psycholinguistics were founded.

So long as the compromise was accepted, no crisis threatened orthodox linguistics. However, in recent years it has become increasingly evident that the compromise was a mistake in the first place. For the compromise is not theoretically defensible, even though a whole generation of linguists may have thought it was. There are two dovetailing reasons for this. On the one hand, a weak integrational position, for instance of the variety adopted by J.R. Firth and some neo-Firthians, is now seen to be internally inconsistent (Love 1988). It fails to follow through the basic integrational claim that language makes no sense except in relation to the relevant totality of human behaviour. On the other hand, a radical integrationist position (Harris 1981) leads to an outright denial of the assumptions which orthodox linguistics has to take for granted in order to engage in linguistic analysis at all. In short, there can be no theoretical compromise because the segregational and integrational approaches are mutually contradictory. But it has taken linguists a long time to realize the depth of the contradiction.

The integrationist position

The integrationist case against orthodox linguistics has been most recently and most explicitly argued in the volume edited by H.G. Davis and T.J. Taylor entitled *Redefining Linguistics*. Although the arguments presented there are not new, the case needed to be laid out in theoretical terms, because the point of the integrationist critique can easily be blunted by sympathetic misunderstanding. Thus, for example, Gardner's remarks on integrationism and generative grammar (Gardner 1985: 221) seem to imply that all would be well if only linguists were prepared to benefit from interdisciplinary co-operation with neighbouring disciplines. Matthews (1985: 7), on the other hand, appears to take the view that integrationism, in common with recent generativist theory, points towards developing a linguistics of the individual rather than a linguistics of languages. Both of these interpretations are rather wide of the mark, although each has grasped one facet of the integrationist case.

The radical integrationist position is perhaps best summed up by Davis, when she applies to linguistics a comment borrowed from Wittgenstein's *Philosophical Investigations*: 'the game we play with it is unregulated' (Wittgenstein 1953: 68). 'Linguistics,' says Davis, 'is unregulated' in this sense: that is, open-ended. For the integrationist this is necessarily so, because linguistics is a language game and language itself is open-ended. The integrationist critic therefore sees orthodox linguistic analysis as resulting from a failure by linguists to understand the nature of the game being played. As a result the players are constantly proposing impossible moves. Linguistics in the hands of the orthodox theorist becomes the imposition of determinacy on phenomena which are intrinsically indeterminate and the discovery of rules which do not exist.

Integrationism is the first movement in the history of linguistics which does not attempt to extend and refine established methods and concepts of language description, or to provide them with theoretical underpinnings. Its failure to address these descriptive concerns is not, however, an oversight. On the contrary, integrationism as advocated by the contributors to the Davis & Taylor volume calls in question the validity of the whole descriptivist enterprise which has loomed so large in the output of modern linguistics. Far from proposing an alternative descriptive formalization of any kind, the integrationist argues against the descriptivist's efforts as implicitly, albeit unwittingly, misdescribing the way language works. But to abandon language description, it need hardly be stressed, would be for the orthodox camp to abandon linguistics altogether. So the division cuts deep, and could hardly cut deeper.

Much deeper, in any case, than controversies such as that between 'hocus pocus' and 'God's truth' linguists. The champions of *hocus pocus* linguistics - and Firth again comes to mind as an example - never abandoned

description as such: they simply admitted that their descriptive systematizations were arbitrary and denied that any one kind of systematization took priority qua description over any other. Hocus pocus linguistics would have better been called 'descriptive pluralism'; for that essentially was what it was. And variety of description could even be held to be of value as highlighting different facets of linguistic structure which no single description could capture. Whereas integrational linguistics, far from being descriptive pluralism, is descriptive nihilism. And while it is true that a number of orthodox theorists (for example, Hockett 1968) have from time to time questioned whether the language system is fully determinate, that has never stopped them from describing selected parts of it as if at least those parts were. But this, from an integrational point of view, is simply an attempt to have your descriptive bun and eat it.

For similar reasons, the division between the segregational and the integrational approaches to language goes much deeper than that which separates theorists who differ over whether languages are psychological objects, or biological objects, or semiotic objects, or abstract objects. In spite of their differences, the various theorists agree that these objects are not directly accessible to observation: their existence has to be inferred. What the integrationist questions, precisely, is whether there are any such objects at all. For the integrationist it is possible to do linguistics without assuming that the linguistic universe consists of a large number of discrete objects called 'languages', let alone having to treat each such object as a self-contained system.

The philosophical basis of the integrationist position is the thesis that the linguistic universe is populated not by mysteriously unobservable objects called 'languages' but by observable human beings who somehow and sometimes manage to communicate with one another. For the integrationist, however, communication is subject to a universal principle derived from everyday human experience. Human experience is constantly structured and restructured by the need to make sense of present events in the light of past events and vice versa. Language is both a product and a mechanism of this process, by which the ceaseless flow of sensations, perceptions, feelings and judgments which contribute to the mental life of the individual are integrated into a continuum, and a stable framework of beliefs and expectations about the world is constructed and maintained.

The human capacity for recognizing, inventing and using signs of various kinds is an essential factor in this process. A sign is any observable feature or complex of features which, by virtue of its integrational function, plays some role in our diverse but continuous practices of making sense. The sole necessary and sufficient condition for the constitution of a sign is our recognition of this role. Signs are fundamental to life in human societies, for every aspect of social organization is in some measure dependent upon them.

Where integrational semiology differs from other semiologies is in not

restricting the linguistic sign either to speech or to writing. From an integrational point of view, language arises from the creative use of the communicational space in which we live, and speaking and writing are only two of the many human activities which articulate this space. A major mistake made in orthodox linguistics, as far as the integrationist is concerned, is its pervasive conflation of linguistic communication with speech communication, and its consequential attempt to restrict linguistic meaning to meanings of sequences of speech sounds. This restriction is canonized by segregationists as the principle of the 'primacy of speech' (often misinterpreted as being merely a thesis about the relationship between speech and writing; but it is much more than that).

The so-called primacy of speech is a vital principle for the segregationist to cling to. Without it, all the other cherished dogmas of orthodox linguistics become manifestly untenable; including such dogmas as the linearity of the linguistic sign and the concept of grammaticality. The central thesis of orthodox linguistics throughout the present century has been that if we restrict our attention to speech signals we shall discover that there is, for each community, a discrete and determinate system of signs in operation, which constitutes that community's language.

What is wrong with the 'primacy of speech' principle is just that speech has no primacy in human communication. Speech sounds have no meaning unless and until they can be integrated, just like other signs, into the process of making sense of some particular episode in the continuum of human experience. And this integration demands in general that there should be patterns of activity other than speech which provide the context for speech to be meaningful. Equally, however, speech provides part of the context in terms of which other activities are meaningful. Speech, therefore, is not segregatable as a or the linguistic form of communication: and to suppose otherwise is merely to confuse the study of speech with phonetics.

The segregationist response

In response to the integrationist critique, the orthodox segregationist has only a limit number of moves available. Although variations are possible, in the end they reduce to the following strategies.

One strategy is to lodge the counterclaim that the integrational approach fails to distinguish between the linguistic knowledge that speakers of a language have and their general knowledge of the world in which they live. Hence the integrationist is unable in principle to establish any scientific basis for linguistics; for without such a demarcation the subject matter for the linguist's investigations remains so ill defined that linguists would be at liberty to vary radically one from another over what to count as linguistic evidence. This type of counterclaim may also be accompanied by the concession that communication

does in some sense involve integration; but what the integrationist fails to see is that the integration is between different systems of knowledge - linguistic on the one hand and non-linguistic on the other.

A somewhat different strategy is to concede to the integrationist that language is open-ended and linguistic structure in many places weak or unclearly defined, but to maintain against the integrationist that this is perfectly compatible with systematicity. The appeal of this strategy is that it can be made to fit in with the traditional truism that language is in a constant process of change. Thus instances of the kind an integrationist might cite in order to demonstrate the indeterminacy of language can always be explained away as instances in which the system is undergoing evolution.

Pursuit of these two strategies in recent years has led to much discussion of such untraditional topics as fuzzy categories, squishes and variable rules. However, as Schnitzer (1990) points out, these manoeuvres in the end reinforce rather than weaken the basic orthodox position that language users have access to a unitary coherent well-formed system. He writes:

The existence of approaches involving fuzzy sets (Lakoff 1973) or squishy grammatical categories (Ross 1972, 1973a,b) does not mitigate this claim since these approaches imply not that the system is in some sense nonexistent or not fully known by the speakers, but rather that not all grammatical classification is binarily Boolean. What is intended in such approaches is that inherent in the putative grammatical system which speakers have knowledge of is a degree of indeterminacy and/or gradation.

Schnitzer identifies five theses which remain unaffected by the concessions which orthodox linguistics currently makes in various compromises with its critics. These are (i) that a language may be viewed as a set of sentences generated by a grammar which generates no non-sentences; (ii) that native speakers have access to a system of tacit knowledge which represents the grammar of the language, and on the basis of which they make grammaticality judgments, (iii) that the mental grammar is unitary, (iv) that it is exhaustive in the sense of comprehending all of the speaker's purely linguistic knowledge, and (v) that it is psychologically real, neurophysiologically instantiated, and independent of the various production and comprehension tasks it may be involved in.

For orthodox theorists these five theses remain intact, Schnitzer argues, irrespective of

whether a theory uses transformations or not, whether it makes use of phrase-structure relationships or dependency relationships,

whether it makes use of syntactic categories or syntactic relations or thematic relations or all three, whether it has one or more than one level of description, whether grammars include arrangements or processes or both or neither, whether they admit of apparatus to include "pragmatic" phenomena, whether they contain derivations, well-formedness conditions, and/or filters, and whether they embody greater or lesser levels of abstraction.

As long as these five theses remain standing, it seems clear that the basic disagreement between integrational and segregational approaches remains unresolved, whatever concessions may appear to have been made on the issues of determinacy and systematicity. All that has changed, from the integrationist standpoint, is the formal guise in which orthodox linguistics presents and promulgates the 'language myth' (Harris 1981).

Three misconceptions of determinacy

The most important issue which divides integrationist from segregationist theorizing is currently seen as being that of determinacy. But exactly what is at issue is often blurred by prevalent misconceptions of determinacy. To bring these misconceptions out into the open will at least contribute to clarifying the discussion, even if it does not persuade the segregationist to abandon them.

Concerning determinacy of grammar, there is much talk at cross purposes which is due to the way in which orthodox linguistics equivocates with the concept of a 'rule'. For example, according to the *Grammar of Contemporary English* by Quirk, Greenbaum, Leech and Svartvik (1972) there is a rule that in English the only adverbs that can modify other adverbs are 'intensifiers' (of which paradigm examples are *very* and *quite*). If it is pointed out that the adverb *unbelievably* can also modify another adverb, the answer is that in that case *unbelievably* must be an intensifier too. But the moment that answer is given the status of the alleged rule alters: in effect, the term 'intensifier' is now being implicitly defined as 'adverb which can modify another adverb'. Immediately, the rule becomes unfalsifiable; and the price of unfalsifiability is circularity.

The equivocation does not end there, however. According to the *Grammar of Contemporary English*, the intensifier rule explains why, although *His reasoning was theoretically sound* is good English, *He reasoned theoretically soundly* is not. If it is objected that there are speakers of English who find no fault with this juxtaposition of adverbs, the grammarian can always reply either that for those speakers *theoretically* must be an intensifier, or else that for such

speakers *theoretically* is not an adverbial modifier but a sentential adverb. In either case the rule is saved. Similarly, if there are speakers who accept *He behaved extremely offensively* but reject *He behaved deeply offensively* it can always be held that for such speakers *deeply* is not an intensifier.

The point is this. Either you admit that the grammar of English adverbial modification is not well defined; or else you invent grammatical subcategories like 'intensifier' in terms of which it can be presented as being well defined. Now the issue of determinacy does not hinge on whether it is possible in principle to come up with grammatical categories and rules which cover all the cases and leave the rules inviolate. For the integrationist that is a question of no theoretical interest whatever. If you allow yourself circular rules like the intensifier rule then you will always be able to claim that grammatical structure is determinate, come what may. To suppose *that* is the issue on which integrationists and segregationists differ betokens one kind of misconception of determinacy. Let us call this the 'definitional' misconception.

A somewhat different misconception of determinacy is championed by Lyons (1968), who argues as follows.

In describing a given language, the linguist will draw the limits of grammaticality at a particular point. His decision to draw these limits at one place rather than another, if the decision is made consciously after weighing the various alternatives that present themselves, will tend to be determined by two main factors. The first may be referred to as the principle of 'diminishing returns'. It is possible to go a lot further with the distributional subclassification of words than would have been thought feasible, or even desirable, by traditional grammarians. But sooner or later, in his attempt to exclude the definitely unacceptable sentences by means of the distributional subclassification of their component words, the linguist will be faced with a situation in which he is establishing more and more rules, each covering very few sentences; and he will be setting up so many over-lapping word-classes that all semblance of generality is lost. This is what is meant by the principle of 'diminishing returns': there comes a point (and where this point is might be legitimate matter for dispute) at which the increase in the complexity of the rules is too 'costly' in proportion to its 'yield', a relatively small increase in the coverage of acceptable and

unacceptable sentences. But the second factor is no less important. Since the sentences of the language being described are so numerous ... one cannot hope to decide for every sentence generated by the grammar that it is definitely acceptable or unacceptable. In fact, one does not have to go very far with the grammatical description of any language before one finds disagreement among native speakers about the acceptability of sentences generated by the rules tentatively established by the grammarian. There is therefore a real, and perhaps ineradicable, problem of indeterminacy with respect to acceptability and unacceptability.

It would seem to follow from these considerations that the grammatical structure of any language is in the last resort indeterminate. It is not only that linguists will differ in their interpretation of which constitutes the optimum degree of generality in the scope of the rules and in their evaluation of the acceptability of particular sets of sentences. There is the additional problem that the generation of one set of sentences of a particular type may make the generation of other sentences of a different type extremely difficult to handle within the theoretical framework established for the first set. ... We may therefore restate as a general principle which governs all grammatical description ... the following fact: whether a certain combination of words is or is not grammatical is a question that can only be answered by reference to a particular system of rules which either generates it (and thus defines it to be grammatical) or fails to generate it (and thereby defines it to be ungrammatical).

Most writers on grammatical theory ... would seem to reject this principle. They suggest that the grammatical structure of any language is determinate and is known 'intuitively' (or 'tacitly') by native speakers. This appears to be an unnecessarily strong assumption. It is undoubtedly the case that native speakers will agree that certain sets of utterances 'belong together', or are 'similar' or 'different' in some

way. These 'intuitions', in so far as they are ascertainable, are an important part of the linguist's data; and he will try to account for them by distinguishing various kinds of acceptability (or well-formedness) and various kinds of relatedness between sentences. But he need not assume that there will be any very direct correspondence between the 'intuitions' of the speakers and the statements made by the linguist.

One should not exaggerate the difference of opinion between linguists on this question. To assert that the grammatical structure of language is *in the last resort* indeterminate is not the same as to assert that no part of the grammatical structure is determinate. There are many combinations of words (e.g. **They likes she*, **The dog bite the man*, etc.) which all linguists will characterize immediately, not only as unacceptable, but also as 'ungrammatical' (without necessarily producing a set of grammatical rules). One can say that their immediate reaction is based on an 'intuitive' awareness of the grammatical structure of standard English; one can equally well say that the combinations in question infringe principles of such generality in utterances of standard English that any grammar would necessarily have to take account of them. It is with respect to the less general principles that alternative grammars might differ in their characterization of sentences as grammatical and ungrammatical. And the 'intuitions' of linguists and speakers of the language tend to be unreliable and inconsistent at this point anyway. (Lyons 1968: 152-4)

In short, for Lyons the grammar of English is up a point determinate, but beyond that point indeterminate; and the point in question can somehow be identified by seeing where different grammatical descriptions begin to diverge. Let us call this the 'common core' misconception of determinacy. For the integrationist, whether there is such a common core is not what is at issue either.

There is a third misconception of determinacy which is more simpleminded than either of the foregoing. Even the most diehard defenders of grammatical rules can usually be cornered into admitting that there just is no rule determining exactly which English adjectives form their comparatives by

adding *-er* and which do not; although everyone agrees that some English adjectives always do and others never do. Similarly, they will often concede that there is no rule in this sense about the use of the English suffix *-ness* to form abstract nouns. But, they will argue, this does not show that in these areas the grammatical structure of the language is indeterminate. On the contrary, all it shows is that the grammar includes rules which require the language-user to exercise an optional choice. Let us call this the 'compulsory option' misconception of determinacy.

This misconception is particularly popular in historical linguistics, because it fits in with the traditional truism that languages are constantly changing. This makes possible a reconciliation of some kind between the theoretical requirements of synchronic and diachronic linguistics, a perennial problem which is part of the legacy of Saussure. Thus points on which the grammar allows the language-user an optional choice can be seen as points at which the language system is potentially open to change.

These three misconceptions of determinacy can be summed up in the following three propositions. (i) Linguistic structure is determinate in the sense that, for any given language, grammatical categories and rules can be set up which are comprehensive and admit no exceptions. (ii) Linguistic structure is determinate in the sense that, for any given language, there is at least a common core of inviolable rules of grammar. (iii) Linguistic structure is determinate in the sense that the grammar of any given language determines the limits within which language-users may freely choose one form of expression rather than another.

For the integrationist, however, accepting or rejecting any or all three of these propositions does not get to the heart of the matter. This is because, on the integrationist view, grammar is not rule-governed anyway in the sense which has to be accepted in order to make any of these propositions worth debating. There are no rules of grammar: there are only grammarians' rules (which is not at all the same thing). The indeterminacy of grammar, for the integrationist, is a simple corollary of the indeterminacy of the linguistic sign itself.

The indeterminacy of the linguistic sign

The indeterminacy of the linguistic sign is the central doctrine of integrationism. The integrationist answer to the question why linguistic signs are not determinate is that the exigencies of human communication demand that they should not be. In other words, indeterminacy serves human purposes better than determinacy. Determinacy has its value in limited areas with specific objectives; but for mediating human communication in the generality of cases determinate systems would be dysfunctional because of their very lack of flexibility. The truth that linguistic signs as used in everyday discourse are

indeterminate was recognized centuries ago by the greatest of all empiricist thinkers, John Locke: but it has taken linguists until now to rediscover that truth and think through its implications.

A linguistic sign is not a fixed form with a fixed meaning, both of which remain magically invariant across all the communicational episodes in which the sign is used. On the contrary, what constitutes a sign is not independent of the situation in which it occurs or of its material manifestation in that situation. This is one of the basic axioms of an integrational semiology (Harris 1984). It manifestly holds for signs in general, and one of the ironic lacunae in orthodox linguistics is that no theorist has ever explained why the linguistic sign should be treated as an exception. But if the linguistic sign is not an exception, the consequences for linguistics are profound.

It becomes vain to look for a fixed code underlying the communicational practices of particular communities; and if this is vain there can be no sense in which linguistic theory needs the concept of 'a language' as its foundation. That would only be necessary if human beings were machines programmed by their maker to accept as communicational input only signals drawn from a fixed inventory of invariant forms, and interpretable only by reference to a fixed inventory of invariant meanings. To believe that this is true, or even approximately true, is to have a remarkably blinkered view of humanity. But this blinkered view is more than congenial to those sciences which can deal with human capacities only on the assumption that the human being must be, in the final analysis, a very complex species of the genus 'computer'.

The integrationist contention that there are no such things as languages is open to all kinds of misinterpretations by those who wish to reject it. Here it will have to suffice to make two relevant points. The first is that from the lay observation that *horse* is an English word, whereas *cheval* is a French word, it does not follow that there must be two theoretically identifiable objects known as 'the English language' and 'the French language'. How people distinguish words as 'English', 'French' etc. is, from an integrational point of view, an empirically researchable subject; but the fact *that they do so* has no theoretically privileged status.

The second point is closely related to the first. It does not follow, either, that if someone is confident that such-and-such an expression is 'good English', whereas another expression is not 'good English', there must be in operation a set of rules which the good English conforms to and the bad English violates. For the integrationist, value judgments concerning good and bad usage do indeed raise questions to be addressed. But these questions of linguistic correctness are to be addressed by investigating the integrational patterns which give rise to the value judgments in the first place. They are certainly not to be addressed by postulating internalized rules to account for them. For that move is in any case explanatorily vacuous. In linguistic behaviour as in other areas of

behaviour, value judgments cannot be explained by appeal to imaginary psychological mechanisms for allocating values.

For the integrationist, linguistic inquiry begins not with a search for invariant units underlying speech communication in a given community, but with an investigation of the presuppositions underlying the linguistic inquiry itself. An objection which might be raised to this is that it either treats linguistics as a form of philosophy, or else redefines linguistics out of existence altogether. What will the integrationist reply to this objection? As to the first part, linguistics *is* a form of philosophy, whether we like it or not: it is that part of philosophy which seeks to elucidate how and where language fits in to the general human scheme of things. As to the second part, one may refer again to Davis's characterization of linguistics as 'unregulated'. Her observation concludes:

although
linguistics is unregulated ... it can never be
redefined out of existence, only into existence,
into an analytic understanding of one's individual
linguistic experience.

One might gloss that observation as a call for linguists to begin by examining the foundations of their own metalinguistic practices.

The integrationist critique of orthodox linguistics may thus be seen historically as bringing the critical inquiry begun by Saussure full circle. Against the linguistics which Saussure inaugurated and his successors in Europe and America developed, the integrationist levels exactly the same criticism that Saussure himself levelled against the linguistics of his predecessors: that it failed to identify its true object of study.

By questioning the availability of any objective viewpoint from which *faits de langue*, as Saussure called them, may be identified, verified and descriptively systematized, integrationism refocusses attention on the ways in which human beings, as language-makers, construct their own linguistic experience. It subjects both the linguist and the linguistic inquiry to a simultaneous recontextualization within the creative process which is language.

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WINNER OF THE 1989 PRESIDENTS' PRIZE

DO CASES DEFINE ?
ON EXPRESSING THE DEFINITE / INDEFINITE OPPOSITION IN POLISH

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Polish has no article system. This fact does not mean that the two lexical signs that in languages such as English represent the noun significate as anaphoric, recalled by the speaker (the definite article) or as introductory, approaching a more refined grasp of the notion (the indefinite article) do not exist or are impossible in Polish.

In his study *Article and Noun in English* Hewson (1972:117) makes a claim, following from Guillaume's theory of the article, that the anaphoric (subjective) and the introductory (objective) perspectives reflected in "the binary contrasting of the values between the singular and the universal senses of the noun's potential significate" are "inherently present in the system of the noun in all Indo-European languages". The objective of this paper is to find out how these two perspectives, the anaphoric perspective and the introductory perspective, underlying the fully developed article systems of languages such as English, are communicated in 'article-less' Polish.

The problem of expressing definiteness (which is a general term used with reference to the definite article's anaphoric properties) in Polish has attracted the attention of polonists such as Pisarkowa (1968, 1969) and Topolinska (1984) and of some contrastivists working in English-Polish contrastive studies, notably Szwedek, who published several articles on the subject in *Papers and Studies in Contrastive Linguistics* (1974, 1975, 1976), and recently, Kryk (1987). Pisarkowa (1968, 1969) and Topolińska (1984) examined various functions of Polish demonstrative pronouns pointing out some that in their opinion corresponded to definite article functions in other languages. Szwedek (1974-1976) argued that word order and sentence stress patterns in Polish operate as non-lexical equivalents of the English article system. In her 1987 study *Deixis in English and Polish* Kryk discussed ways of expressing anaphoric reference in Polish and constructed an algorithm determining, among others, the definiteness marker function of the Polish demonstrative pronoun *ten* (*this*).

In what follows I will look at the uses of the Polish demonstrative *ten* trying to determine if it indeed functions as a lexical marker of definiteness. I will also survey the uses of the Polish numeral *jeden* (*one*) in order to find out if the process of its dematerialization in the direction of a possible indefiniteness marker can already be observed. Finally, I will examine Polish non-lexical equivalents of the English articles postulated by Szwedek, and I will suggest that the accusative-genitive case opposition in the grammatical object function observed in a group of Polish inanimate nouns can also signal the definite/indefinite distinction.

There are a few reasons for supposing that the Polish demonstrative *ten* might develop into an independent lexical marker of definiteness in a future article system. The first one is historical: in many languages possessing article systems the definite articles have etymologically developed from demonstrative pronouns. The second reason is statistical, suggested by the findings of Miodunka (1974:44) who observes that out of all pronouns used in spoken Polish the pronoun *ten* has the highest frequency of occurrence. Finally, there are uses of the pronoun *ten* which cannot be classified as demonstrative but have, in some analyses, been ascribed the value corresponding to that of the definite article in other languages.

Examples (1b) and (2b) below illustrate some uses of the pronoun *ten* which have been pointed out as having the function corresponding to that of the English definite article:

- 1.a. Either *the well* was very deep, or she fell very slowly.
- b. Albo *ta studnia* była bardzo głęboka, albo może Alicja opadła tak powoli.
("Alice in Wonderland". Translated by M.Ślomiczynski)
- 2.a. I've walked around Central Park. *The park* is gorgeous.
- b. Spacerowałam po Central Parku. *Ten park* jest wspaniały.
Park ten jest wspaniały.
(Kryk 1987:83)

The pronoun *ten* in the Polish translations is employed here to render the anaphoric definiteness of the nouns in the English originals. We should observe that in ex.(1b) the presence of the pronoun *ten* is not indispensable for the noun *studnia* (*well*) to be interpreted as definite. The translator must have chosen to use the pronoun for the purposes of stylistic balance and emphasis. (Notice the *ta-tak* parallel absent from the original). In ex.(2b), however, *ten* is obligatory. We should also remark that the pronoun can be placed before or after the noun it defines. In her discussion of the definiteness function of *ten* Kryk never mentions the optionality of the pronoun in cases like (1b) or (3b) below. She quotes example (3) in her book as illustrative of a typical definiteness use of *ten* in Polish. Example (4), however, clearly shows that the pronoun *ten* is not absolutely needed to render the anaphoric meaning of the English article in a situation similar to that described in ex.(3). Cf.:

- 3.a. Remember *the punk* we saw the other day?
- b. Pamiętasz *tego punka*, którego widzieliśmy któregoś dnia?
(Kryk 1987:83)
- 4.a. Do you remember *the picture* Andrew got from me at Christmas?
- b. Czy pamiętasz (*ten*) *obraz*, który Andrzej dostał ode mnie na Boże Narodzenie?

Szwedek, who in his research (1974-1976) develops Pisarkowa's analysis of Polish demonstrative pronouns as definiteness markers, claims (1974:270, 1976:102) that their article-like function is clear only when they are obligatory. He shows that obligatoriness or optionality of the unstressed demonstrative pronoun *ten*(=*this*), and of the indefinite pronoun *jakiś* (=some), which are employed to mark definiteness and indefiniteness respectively, depends in many cases on such factors as word order and sentence stress. Szwedek's series of illustrative examples is given in (5)-(11):

- 5.a. Widziałem jak do pokoju wchodził *mężczyzna*.
 b. I saw as to the room was coming in *a man*.
 (= I saw *a man* coming into the room.)
- 6.a. Kiedy wszedłem zobaczyłem, że *mężczyzna* stał przy oknie.
 b. When I entered I saw that *the man* was standing by the window.
- 7.a. Kiedy wszedłem zobaczyłem, że *ten mężczyzna* stał przy oknie.
 b. When I entered I saw that *this man* was standing by the window.
- 8.a. Kiedy wszedłem zobaczyłem, że *jakiś mężczyzna* stał przy oknie.
 b. When I entered I saw that *some man* was standing by the window.
- 9.a. Kiedy wszedłem zobaczyłem, że przy oknie stał *mężczyzna*.
 b. When I entered I saw that by the window was standing *a man*.
- 10.a. Kiedy wszedłem zobaczyłem, że przy oknie stał *jakiś mężczyzna*.
 b. When I entered I saw that by the window was standing *some man*.
- 11.a. Kiedy wszedłem zobaczyłem, że przy oknie stał *ten mężczyzna*.
 b. When I entered I saw that by the window was standing *this man* [1].

Sentence (5) provides context for the remaining sentences in the series. The noun *mężczyzna* occupying the sentence final, focal position is introduced here as new information, a fact which in the English translation is represented by means of the introductory article *a*. Sentences (6)-(11) describe the situation the speaker saw after entering the room. Depending on the word order in the subordinate clauses here, and the position of the noun *mężczyzna* in particular, as well as on the presence or absence of the definite pronoun *ten* or the indefinite pronoun *jakiś*, the noun *mężczyzna* is interpreted as either coreferential or non-coreferential with *mężczyzna* of sentence (5), which in the English translations is indicated by the definite or the indefinite article. When no pronouns are present in front of the noun *mężczyzna* (examples 6 and 9), the difference between the definite (i.e. coreferential with ex.5) and the indefinite interpretation of this noun depends on the word order in the clause. Sentence (6), with *mężczyzna* in the clause initial position, is a natural sequel to sentence (5), and there is no doubt that the noun *mężczyzna* here and the noun *mężczyzna* of sentence (5) denote the same man. In ex. (9) the noun *mężczyzna* occupying the final position in the clause, can have no coreferential reading with *mężczyzna* of ex.(5), and sentences (5) and (9) do not form a piece of continuous text. It is quite clear that in sequences involving coreference the word order is of crucial importance when no demonstrative pronouns are present in front of the noun whose coreferentiality is to be determined. We have to remember, however, that the noun's position in the sentence can indicate its possible coreferentiality, and thereby its anaphoric value, only in the most natural, unmarked phonetic conditions, with the sentence stress falling on the sentence final noun. From the point of view of the anaphoric definiteness of the noun *mężczyzna*, ex.(7) (*ten mężczyzna*) has the same reading as ex.(12) (*Ø mężczyzna*), and ex.(10) (*jakiś mężczyzna*) equals ex.(9) (*Ø mężczyzna*). This means that the pronouns *ten* and *jakiś*, of examples (7) and (10) respectively, are optional. In examples (8) and (11), however, their presence is obligatory for the coreferential meaning of the noun *mężczyzna* changes if the pronouns are removed (see examples 6 and 9). Evidently the pronouns *ten* and *jakiś* here have a greater 'defining' power than that implied by the word order. The conclusion Szwedek (1975:170) draws on the basis of the series discussed is that "since the demonstrative pronoun *ten* and the indefinite pronoun *jakiś* are obligatory in some circumstances depending on the word order and the place of sentence stress, they function in a way similar to the English articles".

Pisarkowa (1968) points out an interesting defining usage of *ten* in front of proper names, which seems to me to belong to the type represented by the non-demonstrative use of *ten* with nouns that are already defined by a possessive pronoun and thus have their extensivity close to that of proper names. Examples of this usage are given in (12)-(14):

12. Byliśmy najpierw oglądać *ten Frankfurt*. (Pisarkowa 1968)
First we went to see *this/that Frankfurt*.
13. *Ten Janek* zawsze coś przeskrobie.
This/that Johnny always gets into trouble.
14. Cóż mam zrobić z *tym moim dzieckiem*?
What shall I do with *this/that my child*?

This usage is typical of spoken Polish. The pronoun *ten* here indicates the speaker's emotional attitude towards the object he is talking about, and it translates into English by means of the demonstrative pronouns *this* and *that*. Kryk (1987:94) compares this usage of *ten* to the "emotional deixis" value of English *this* and *that* illustrated in examples (15) and (16) quoted after Lakoff (1974:352):

15. I see there's going to be peace in the mideast. *This Henry Kissinger* is really something!
16. *That Henry Kissinger* sure knows his way around Hollywood.

According to Kryk, this usage involves a presupposition that "both the speaker and the hearer share the knowledge of the facts alluded to, and that there is something remarkable about these facts" (1987:94). While it is true that *ten* in examples (12)-(14) is anaphoric in the sense that it refers to the facts or objects both the speaker and the hearer are familiar with (our visit to Frankfurt, Johnny, my son), it is hard for me to see that there is something remarkable about the people or places described by the pronoun *ten* here, unless we interpret as remarkable the speaker's emotions the pronoun signals (i.e. boredom, impatience, fishing for empathy). In his discussion of the "honorific article" in English, Hewson (1972:114) describes occurrences of the article *the* with names of prima donnas and famous women as imitation of the French or Italian usage, observing that "at the popular levels of speech this French or Italian article (illustrated in the French example (17)) is generally translated into English by means of a demonstrative pronoun:

- 17.a. Où est-elle, *la Louise*?
- b. Where is *that Louise*? (Hewson 1972:114)

This usage of the French definite article with proper names seems to me the closest estimation of the defining value of Polish *ten* in examples (12)-(14). Topolinska (1984:312) must have had this type of article usage in mind when she spoke of "expressive uses" of *ten* in spoken Polish as corresponding to "expressive uses of articles in other languages". An illustrative example of hers quoted in (18) is worth mentioning in the present discussion for the pronoun *ten* here qualifies nouns that unlike proper names and proper name equivalents, have generic reference. In (18) the speaker is talking about all girls of a certain type, not of a definite group of girls that he evokes anaphorically:

- 18.a. *Te dziewczyny mają tych pierścionków na tych palcach więcej niż rozumu w głowie.* (Topolińska 1984)
 b. *These girls have more of these rings on these fingers than they have brains.*

Developing the claim that the distinction between the anaphoric and the introductory representation of a noun's significate exists (or is possible) in all Indo-European languages, Hewson (1972:118) outlines a universal pattern for the genesis of the article. According to this pattern, established on the basis of a historical study of the article systems in languages with articles, the definite article appears before the indefinite when a need arises for marking concrete anaphoric references in a language. In many languages the definite article is etymologically related to a demonstrative pronoun (as was the case of *the* and *that* in Old English, which, argues Hewson, is explained by the functional similarity between the two forms which both express anaphoric values). The appearance of the indefinite article as a separate lexical entity, morphologically derived from the numeral *one*, is preceded by a period in which the numeral *one* has the meaning of a *certain* and is employed to denote a more particular introductory reference. If we look at modern Polish from the perspective of this pattern and review the so-termed "article-like" usages of the demonstrative pronoun *ten*, we can perhaps conclude that from the point of view of the article system development Polish today is at the stage comparable to Old English. The definite article-like anaphoric functions of the demonstrative *ten* are detectable but they are often hard to distinguish from the clearly demonstrative functions of the pronoun. Still, *ten* seems to be a likely candidate for a definite article in future Polish. As to the possible development of the numeral *jeden*(=*one*) in the direction of an indefinite article, Polish seems to have entered the stage when the indefinite yet particular reference is expressed by the value of a *certain* clearly present in the significate of the numeral *one*(=*jeden*), as evidenced by the beginning of a popular Polish song from the area of Kraków, quoted in (19) and by the opening phrase from a Silesian miner's joke, quoted in (20):

19. *Krakowiaczek jeden miał koników siedem; pojechał na wojnę, został mu się jeden.*
A certain Cracovian had seven horses. He went to war and was left with one.
 20. *Przychodzi jeden górnik do lekarza i powiada:*
Comes a certain miner to the doctor and says:

Considering the possibility of Polish developing lexical indefiniteness markers, we can observe that the indefinite pronoun *jakiś* (=some) described by Szwedek as having an indefinite article value (see discussion of example 10) cannot be treated as a candidate for a future lexical indefiniteness marker for it has no particularizing force, essential for an indefinite article in a binary article system.

Examining the chances for the genesis of an article system in Polish we have to remember that for articles to develop it is not enough that the language has lexical candidates with extended (dematerialized) meanings and functions. For an article system to emerge the case system in the morphology of the noun has to disappear or substantially weaken, for only then the dematerialization (in the direction of a greater notional generalization) of the noun's potential significate is possible. (For discussion see Hewson 1972:66-67). In modern

Polish, with its seven cases, the case system is still very strong. It is therefore reasonable to suspect that at least some of the representations reflected in the article system of languages with reduced or extinct case morphology are inherent in the case system of Polish and signalled by the observed case oppositions.

In this paper I am suggesting that some type of the definite/indefinite distinction is expressed by the accusative/genitive contrast in the grammatical object function of some Polish nouns. Examples (21)-(29) illustrate two basic genitive case usages observed in the direct objects of non-negative sentences. The VP's of the examples in question are interesting in that they can express the verb-object relation with the help of the accusative or the genitive marked object noun, a fact which makes the distinction between the functions of these two cases easier to determine. In the sentences of the first group (examples 21-24) the accusative case on the object denotes a whole, and the genitive case indicates a part. The nouns capable of signalling the distinction in Polish by means of the two cases are uncountable mass nouns (such as *cukier*=sugar) and countable inanimate nouns in the plural (such as *jabłka*=apples). Cf.:

- | | |
|---|--|
| 21.a. Kupiłem <i>cukier</i> .
I've bought (the)sugar-Acc. | b. Kupiłem <i>cukru</i> .
I've bought some sugar-Gen. |
| 22.a. Zjadłem <i>zupę</i> .
I've eaten the soup-Acc. | b. Zjadłem <i>zupy</i> .
I've eaten some soup-Gen. |
| 23.a. Kupiłem <i>jabłka</i> .
I've bought (the)apples-Acc. | b. Kupiłem <i>jabłek</i> .
I've bought some apples-Gen |
| 24.a. Przyniosłem <i>jajka</i> .
I've brought (the)eggs-Acc. | b. Przyniosłem <i>jajek</i> .
I've brought some eggs-Gen. |

In the English translation of examples (21) and (22) the accusative case object is rendered by means of the zero article or the definite article denoting all of the uncountable object or a defined limited quantity of it (seen as a whole). The genitive case objects are expressed as qualified by the indefinite reference pronoun *some* indicating an undefined amount of the object. If we agree that whole implies a definitely limited quantity whereas part has no defined limits and is therefore undefined, we can make a suggestion that the accusative/partitive genitive opposition in Polish expresses the definite /indefinite distinction, equivalent to the *Ø/the* versus *some* contrast in English.

To explain the presence of the whole/part distinction in the countable plural nouns of examples (23) and (24) a view of plurality different from the usual understanding of this concept in English has to be adopted [2]. A plurality of small inanimate objects should be viewed here as a divisible whole, which is described as divisible because it consists of a number of individual entities into which it can be naturally divided. In this divisible whole we can always distinguish a part which consists of a smaller plurality of these objects. Polish countable nouns in the singular do not normally exhibit the accusative/genitive pattern because they are not naturally divisible in the above described sense, and so the whole/part distinction cannot be represented in their significates.

In the sentences of the second group (examples 25-29) the value of the accusative/genitive opposition in the grammatical objects is much harder to determine. The nouns capable of making the accusative/genitive distinction here

denote [-animate], [+countable] single objects which cannot be interpreted as naturally divisible. Depending on the verb and the form of the verb used several differences can be implied by the accusative/genitive contrast in the direct object. In example (25) with the verb *dać*(=give) and the direct object denoting an object that could be consumed by the speaker, the genitive form implies that the item is one out of many others of the kind that could be consumed. The accusative form of ex.(25b) identifies the item as a definite particular object. The noun requires a definiteness marker (supplied by *ten*), and the whole phrase indicates that the cigarette is wanted for something else than consumption. The speaker wants to inspect it or maybe to keep it. Cf.:

25.a. Daj (mi) *papierosa!* Muszę zapalić.

Give (me) a *cigarette-Gen.* I've got to have a smoke.

b. Daj-no (mi) *ten papieros.* Za młody jesteś żeby palić.

Give (me) *this cigarette-Acc.* You're too young to smoke.

In example (26a) the genitive form indicates that the hearer can have one of an unlimited quantity of objects of the kind. The accusative form (26b) makes it clear that a choice is to be made between two definite pieces of meat prepared for dinner, one being a cutlet, and the other a schnitzel. The quantity of the object is clearly indicated and the object can be seen as particular and anaphoric (=the) or as a single representative of the species (A is very close to one here). Cf.:

26.a. Co wolisz: *kotleta* czy *sznycła?*

What do you prefer: a *cutlet* or a *schnitzel-Gen?*

b. Co wolisz: *kotlet* czy *sznycel?*

What do you prefer: *the/a cutlet* or *the/a schnitzel-Acc?*

In her paper *The Semantics of Case Marking* Wierzbicka (1983:263) observes that with verbs involving consumption "the genitive suggests a pleasurable snack, and the accusative suggests a large item of seriously consumed 'serious' food". It seems to me that the difference here lies not so much in the 'seriousness' of the food consumed as in the way the amount (limited or unlimited) of it is conceived. Example (27b) shows that the accusative case can also denote a small item of food such as a wafer:

27.a. Chciałbym *andrucika*.

I would like a *wafer-Gen.*

b. Jaś dostał od mamy *andrucik(a)* i jabłko. Najpierw zjadł *andrucik* a potem jabłko.

Johnny got a *wafer-Acc* or *Gen.* and an apple. First he ate *the wafer-Acc.* and then the apple.

Wierzbicka notices also that "if the speaker is concerned about what happened to the object the accusative is definitely preferable to the genitive" (1983:263). Her examples are given in (28):

28.a. Ojej! Kot zjadł *mój kotleta!*

Oh no! The cat has eaten *my cutlet-Acc!*

b. Ojej! Kot zjadł *mojego kotleta!*

Oh no! The cat has eaten *my cutlet-Gen!* (Wierzbicka 1983)

This difference is seen more clearly when the indirect object is present in a sentence, as in example (29):

29.a. Ojej! Pies porwał mi *but!*

Oh no! The dog has snatched of me *a/the shoe-Acc!*

b. Ojej! Pies porwał mi *mój but!*

Oh no! The dog has snatched of me *my shoe-Acc!*

c. Ojej! Pies porwał mi *buta!*

Oh no! The dog has snatched of me *a/the shoe-Gen!*

d. *Ojej! Pies porwał mi *mojego buta!*

Oh no! The dog has snatched of me *my shoe-Gen!*

We can notice that when the indirect object (*mi=of me*) is present, the defining possessive *mój(=my)* on the genitive-marked object (ex.29d) makes the sentence much worse, if at all possible, whereas its presence makes no acceptability difference in the sentence with the accusative-marked object (ex.29b). This fact suggests that with the genitive-marked objects the emphasis is on the experiencer (*of me*) and there is no room for elaborating and defining the notion of the direct object, which, as Wierzbicka rightly observes, is not so important to the speaker. With the accusative-marked objects the defining modifiers are not only possible but welcome, even if the experiencer is mentioned in the sentence, for the speaker's attention is all centered on the object. We are tempted to conclude that what is of greater concern to the speaker is more important to him and therefore more definite in his mind, the term *definite* implying a more marked presence in the speaker's subconsciousness. Thus it is more easily recalled and more concretely represented in his speech.

In conclusion: Do Polish cases define or don't they? Yes, they do define but in a way different from the usual understanding of the definite/indefinite article opposition in languages such as English. For divisible objects, expressed by [-countable] mass nouns and [+countable] animate plurals, the genitive case in the grammatical object situation denotes an indefinite part, corresponding to what in English is expressed by the indefinite pronoun *some* while the accusative case evokes a whole, which is either a defined unit (including units that consist of a number of smaller entities), rendered in English by means of *the*, or it evokes a continue total expressed in English by the article zero. When the grammatical object is a countable inanimate in the singular, the accusative case denotes a single anaphorically definite object or a single definite object the speaker is concerned about. The genitive case implies that the speaker views the object as one of many possible, or as an object of little importance to him.

NOTES

[1] In my reading of this example the word *okno* in the NP *przy oknie* (*by the window*) carries a heavy stress.

[2] In English the plural -s sign does not permit seeing a plurality of numerical objects as a continue which contains a number of objects, interpreted here as a whole. The plural -s is a sign of discontinuum, representing a function similar to that of the definite article. (See Hewson 1972:105.)

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II

GENERAL LINGUISTICS

VICHIAN OBSERVATIONS ON THE CHANGING PARADIGM IN LINGUISTICS

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INTRODUCTION

Noam Chomsky's bold attempt in 1957 to put the ever-elusive concept of *creativity* on the research agenda of linguistics came to have profound and long-lasting repercussions on the mindset of this science. *Creativity* was, for the first time ever, taken out of the field of aesthetics and held up for analysis as a product of the mind's language faculty. But shortly thereafter it became obvious that the Chomskyan paradigm had unnecessarily constrained this notion to a mere logico-syntactical one: i.e. to that property of grammatical systems which underlies the generation of infinitely well-formed sentences.

Thus, while Chomsky's ground-breaking proposal seemed at first to initiate an approach in linguistics which would have allowed linguists to get a closer look at how the mind manufactures language symbols in response to environmental flux, it turned out to be no more than just another model of grammatical productivity. During the last two decades, the paradigm in linguistics has been gradually moving away from the Chomskyan mindset to one that I would call "Vichian," for it was the great Neapolitan philosopher, Giambattista Vico (1688-1744), who may have been the first to put forward a theory of creativity that foreshadowed current research on the cognitive role played by metaphor in ordinary communication. Thus, while those who continue to work within the Chomskyan paradigm tend to ignore metaphor as a "deviant" phenomenon, or as a derivative of more basic literal modes of expression, it is becoming increasingly obvious that the only path that leads to an understanding of creativity is the one that approaches metaphor as the basis for the conceptual organization of reality. This new paradigm does not see the human mind as some abstract computation device; nor does it consider the goal of linguistics to be what Johnson-Laird (1988:52) aptly portrays as the search for appropriate computer programs

to model grammatical abstractions. Rather, it considers language to be a metaphorical extension of sensorial experience, just as Vico did over two centuries ago.

The research generated by this exciting new paradigm is beginning to show that the computational approach to language is far too narrow and, ultimately, rather uninteresting. In recent years, Lakoff and Johnson (e.g. 1980, Lakoff 1987, Johnson 1987) have argued persuasively that any scientific study of verbal creativity must be centered on metaphor. But it is seldom acknowledged, or even recognized, by contemporary linguists that this was Vico's very blueprint for the study of the human mind in his monumental *New Science* of 1744 (Bergin and Fisch 1984). Therefore, it behooves anyone working in linguistics today to provide appropriate Vichian coordinates to the direction that this field of inquiry is currently taking. (See also the seminal work by Di Pietro 1976a, 1976b, 1981 on the relevance of the *New Science* to linguistics).

THE COMPUTATIONAL PARADIGM IN LINGUISTICS

The establishment of a computational paradigm in post-1957 linguistics was an historically inevitable development. With the notable exception of Sapir (1921) and of his pupil Whorf (1956), the focus in the *modus operandi* of linguistics proper has been on the elaboration of models and theories of language structure akin to those found in the mathematical sciences. Very few linguists have ventured to look beyond the formalizable aspects of language structure in order to see how language forms underlie cultural models of cognition and behavior. In other words, linguistics has unnecessarily limited its primary purview to matters of form and structural design since its inception.

It is out of this ideological fabric that Chomsky weaved his program for the mathematical study of language in 1957. Many of the ideas expressed in *Syntactic Structures* were not particularly innovative; and they were certainly not "revolutionary": transformational rules had already been extensively developed by Chomsky's mentor Zellig Harris (1956); and the idea of abstract formalization has, as already mentioned, always been at the epistemological core of linguistic practice. As Anttila (1976:65) has aptly put it, the original version of Transformational-Generative (TG) grammar was no more than "a natural outgrowth of structuralism." It was, as Hymes and

Fought (1981:11) observe, a "competing conception of the same activity, the analysis of linguistic structure."

It was perhaps Chomsky's early student and associate, Robert Lees (1957) who first attributed to *Syntactic Structures* much more than its announced goal of dealing with the structural properties of syntax in what became an extremely influential review of the book. Lees predicted that *Syntactic Structures* would revolutionize linguistics, rescuing it from what he saw as its pre-scientific practices of data-collection and classification of interesting facts. According to Lees, the Chomskyan paradigm would finally provide the abstract constructs and theoretical models that linguistics needed to become a truly scientific enterprise.

It is highly unlikely that Lees' encomiastic assessment would have caught on with the instantaneous urgency that it did, if it were not for the fact that Chomsky made the notion of creativity the cornerstone of his theoretical edifice. Linguists saw, for perhaps the first time, a unique opportunity to go beyond language structures in themselves and to get a closer look at the role of language in cognition. In other words, it was not really Chomsky's theory of syntax that captured the fancy of many linguists, but his eloquently-articulated claim that his theory would offer insights into the nature of the mind and, especially, of creative thinking.

In *Syntactic Structures*, Chomsky's view of creativity was phrased as an analogy to chemical theory. It was portrayed as a rule-governed process capable of generating "all grammatically possible utterances", just like a good chemical theory "might be said to generate all physically possible compounds" (1957:48). What was most appealing about this definition was that it held the promise of providing linguists with a theoretical tool that would allow them to carve out creativity from its grammatical substratum and to come to understand it in the same way that a chemist comes to understand some property of nature by means of chemical formulas. As linguists started *en masse* to adopt the TG blueprint for the analysis of different languages it became saliently obvious that the kind of creativity Chomsky was hoping to encapsulate in grammatical formulas had little or nothing to do with traditional notions of creativity, such as those spontaneous acts of

the imagination that underlie scientific inventions, literary and musical creations, and even ordinary conceptualizations. As it turned out, TG grammar reduced the notion of creativity to a computational algorithm. Although Chomsky and his followers have enlarged this view to accommodate the understanding of sentences, the basic computational ideology has not changed. It remains essentially what Chomsky (1966a:10) has characterized appropriately as "the speaker's ability to produce new sentences that are immediately understood by other speakers." This process of understanding operates within a system of rules and principles that allow for the generation of an infinite class of sentences with their formal semantic properties.

While the mechanics and terminological practices of TG theory may have changed somewhat over the years--recent versions being called *Government and Binding Theory* (Chomsky 1982)--the basic premise that creativity is a rule-governed computational phenomenon has remained impervious to modification. The goal of Chomsky and his followers continues to be the elaboration of general logico-propositional principles that will specify the types of rules and representational apparatus needed to define creativity algorithmically. To view this phenomenon differently is seen as a meaningless enterprise: "Creativity is predicated on a system of rules and forms...Without such constraints, we have arbitrary and random behavior, not creative acts" (Chomsky 1966a:42).

The dominant image that crystallizes from the computational paradigm is that of the human mind as an automaton--an abstract machine that continually manufactures well-formed strings of words on the basis of neurologically-programmed rules. Leaning explicitly on the ideological shoulders of Descartes (Chomsky 1966b), the computational paradigm is an historical offshoot of the mechanical view of ratiocination. The idea that the activities of the human mind can be simulated, reproduced, or modeled in mechanical ways has always appealed to Western philosophical tradition. Thomas Hobbes (1656/1839) may have been the first to have stated this idea in 1656 when he defined ratiocination bluntly as arithmetical computation: i.e. as a process akin to the addition and subtraction of numbers. His goal was to devise a machine capable of thought. The Chomskyan paradigm is really no more than a brilliant attempt to make good on Hobbes' dream. In other words, the

computational paradigm in linguistics is a descendant of a philosophical genealogy that starts with Hobbes and includes George Boole (1854/1951)--who sought to determine the laws of thought within a system of logic--, Gottlob Frege (1879)--who combined Boole's system within Aristotelian categorical logic--, and Russell and Whitehead (1913)--who axiomatized the Boolean-Fregean system. This line of philosophical thought led eventually in the thirties and forties to the first serious attempts to take the study of human reasoning "out of the mind," so to speak, so as to be better able to study it scientifically "in a machine." Allan Turing's ground-breaking work on finite-state automata in the thirties (e.g. 1936) showed that the simple architecture of a four-operation machine (*move right, move left, write a slash, erase a slash*) could in principle carry out any recursive function. Turing's machine formed the theoretical model upon which the modern computer has been constructed. Claude Shannon then went on to show in 1948 that any kind of information could be described in terms of binary choices between equally probable alternatives, thus providing a means of representing information that was independent of its specific content and of the devices (or media) that carried it. The psychological implications were immediately obvious: machines could carry out thinking processes, and the brain could be studied as an information-processing machine.

It was only a few years later that *Syntactic Structures* came into the picture, fitting in rather nicely within the emerging computational *Zeitgeist* in philosophy and psychology. Ulrich Neisser has described the computational paradigm appropriately as follows (1967:6):

The task of a psychologist in trying to understand human cognition is analogous to that of a man trying to discover how a computer has been programmed. In particular, if the program seems to store and reuse information, he would like to know by what 'routines' or 'procedures' this is done. Given this purpose, he will not care much whether his particular computer stores information in magnetic cores or in thin films; he wants to understand the program, not the 'hardware.' By the same token, it would not help the psychologist to know that memory is carried by RNA as opposed to some other medium. He wants to understand its utilization, not its incarnation.

TG grammar--in any of its versions--has provided a specific *program* for studying language, contributing, at the same time, to computational theories of cognition, even though some computer scientists (e.g. Schank 1980) have become openly hostile to its inability to take into account world knowledge. It is fair to say, however, that the current debate on the nature of verbal thought and creativity may never have been triggered off if TG grammar had not become so influential. To this day, it continues to stimulate much debate and research on rather fundamental questions in the scientific study of language.

THE CHANGING PARADIGM

The first serious challenge to the computational paradigm came in 1971 when Dell Hymes argued persuasively that the larger human and social context is an active participant in shaping the rules of grammar--which Chomsky had conceived as being immune to such external forces. The capacities of people, the organization of verbal modalities for socially-defined purposes, and the sensitivity of rules to situations were shown by Hymes to be determinants of grammatical behavior. Hymes' case against TG grammar led shortly thereafter to heated debates on the goals of linguistics proper. A direct consequence has been a changing paradigm that is moving slowly in what I have called a Vichian direction.

It is rather interesting to note that Chomsky himself became aware of the Vichian alternative approximately a decade ago. Predictably, he dismissed it *tout court* (Chomsky 1980:9):

Some might argue, perhaps along Vicoesque lines [emphasis mine], that we can still do better in the 'human sciences' by pursuing a different path...But I am interested in a different question. Can we hope to move beyond superficiality by a readiness to undertake perhaps far-reaching idealization and to construct abstract models that are accorded more significance than the ordinary world of sensation?

Chomsky's dismissal is an obvious attempt to exclude any approach that is anything other than a rule-oriented one. While TG rules do indeed allow the linguist to account rather specifically for literal speech in its decontextualized and "machine-

readable" forms, they are incapable of relating language to "the ordinary world of sensation," as Chomsky characterizes it. By intentionally excluding metaphor, metonymy, and connotative discourse as tangential to a purported propositional core, the TG approach has nothing to say about verbal behavior that is creative in the traditional sense of the word. The Vichian paradigm, on the other hand, focuses precisely on this kind of language. This might require an approach that is not tied to rules or abstract mathematical models, but it is certainly not beyond the realm of possibility. In his fascinating book, *Actual Minds, Possible Worlds* (1986), the great cognitive psychologist Jerome Bruner makes precisely this point. For any real progress in unraveling the mystery of the human mind to be made, cognitive sciences like linguistics will have to go beyond the study of rational and logical processes and, therefore, develop the necessary procedures for studying the other half of the mind (see also Haskell 1987 on this point). As Martindale (1981:viii) aptly puts it, we desperately "need to understand the 'irrational' thought of the poet as well as the rational thought of the subject solving a logical problem."

In a Vichian approach to verbal creativity, metaphor plays a pivotal role. For Vico, it is a type of *logica poetica* that allows us to make sense of experience. Its internal workings constitute our primary cognitive means for registering memorable experiences. It constitutes the uniquely-human capacity for evoking and encoding our mental images of the world, allowing us to "consider things in all the forms by which they may be signified" (Bergin and Fisch 1984:400). The kind of logic that Vico alludes to "means both word and idea" (Bergin and Fisch 1984:401), suggesting that language cannot be studied apart from the "ordinary world of sensation" that it encodes. Vico traces the locus of this faculty to the human imagination, which he portrays as the prerequisite for language and thought, allowing us to select from sensation those meaningful *Gestalts* that the mind will then convert into symbolic structures. Metaphor is the vehicle that transforms concrete experience into an inner world of meaning.

The recent fascination with all manifestations of metaphorical discourse is a sign that the computational paradigm is losing its grip on the mindset of linguistics. As Vico predicted over two centuries ago, the research on all aspects of metaphor is beginning to show that much of the so-called rule-

governed order that we perceive in the world, and in grammar, is there only because we put it there. Clearly, the Vichian lineage can be seen to include Sapir, Whorf, and more recently, Lakoff, Johnson, and Langacker (1986). This paradigm looks at language in terms of the culturally-specific models of the world which it imposes on its speakers. These play an enormous role in our cognitive organization of the world. When we think of *anger* in terms of the perceived physiological effects of anger (e.g. *He was foaming at the mouth; You make my blood boil; She's letting off steam*, etc.), we are, in effect, making use of a cultural model (Lakoff and Kövecses 1987). The metaphor *anger = the physiological effects of anger* is the imagery scheme we use to understand the emotion of anger. It is through recourse to metaphorical imagery such as this that we come to understand all emotions. As Vico puts it, "when we wish to give utterance to our understanding of spiritual things, we must seek aid from our imagination to explain them and, like painters, form human images of them" (Bergin and Fisch 1984:402).

Current research on metaphor has vindicated much of what Vico posited in his *New Science*:

- Metaphor pervades ordinary discourse (Pollio et al. 1977);
- Metaphor is not an extension of literal semantic computation (Honeck and Hoffman 1980; see Nuessel 1978 for a literature survey);
- Metaphorical thinking is a dominant option in normal communicative behavior (e.g. Hoffman and Kemper 1987);
- The neurological programming of metaphor enlists basic sensorial functions (e.g. Danesi 1989).

This kind of research has started to show that creativity in language might be beyond formalization by rules. As Basso (1976:121) observes, metaphor is our way out of the straitjacket of literal language, allowing us to "enrich it through the introduction of untried means of expression."

CONCLUDING REMARKS

The signs that linguistics is becoming increasingly more Vichian--whether this science knows it

it or not--are proliferating. Linguists are beginning to understand that the human mind cannot be conceived of as a grammatical machine. The mind, as Vico put it, "is naturally inclined to see itself externally in the body; and only with great difficulty does it come to understand itself by means of reflection" (Bergin and Fisch 1984:236).

The Chomskyan interlude in linguistics has been a very instructive one indeed. It has finally forced linguists to come to the realization that language is a human phenomenon, not a mathematical one. As such, it cannot be studied exclusively in the style of the Galilean-Cartesian tradition that has shaped the physical sciences. It is time to realize that by making language an abstract mathematical artifact we end up saying very little that is truly meaningful. Vico himself reacted to the Galilean-Cartesian approach in the "human sciences" because he argued eloquently that the study of human beings and of the way they communicate necessarily entails the interweaving of individual, cultural, and social factors. Vico did not dismiss the Cartesian view of mathematical knowledge. He simply pointed out that such knowledge did not exist independently of the creative abilities of the mathematician. The Vichian approach in linguistics would focus on those matters that Chomskyan linguists would consider to be of marginal interest, because it is precisely such matters (e.g. metaphor) that allow us to change our "mental programs". Every new metaphor produces a new association, a new imagery schema, in short, a new thought. The coining of new metaphors is a feat of the imagination reaching beyond the limitations of mental grammar and "reprogramming" itself.

The changing paradigm in linguistics parallels what has happened to mathematics. In 1931, Kurt Gödel showed rather matter-of-factly that there can never be a consistent system of axioms to capture all truths in mathematics. The exploration of the world of mathematics is bound to go on forever. This is what linguists are starting to understand about their own domain of inquiry. It will be impossible to write the complete grammar of any language. Like the mathematician, the Vichian linguist will have to look beyond axioms and rules, and search out those acts of the imagination that make language a creative phenomenon.

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METALINGUISTIC AWARENESS
AND THE NATURE OF LINGUISTIC INQUIRY

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An investigation into metalinguistic awareness draws theory and practice together in an insidious fashion. If we seek the locus for the concept we will find that it resides in the individual speaker. But if we pursue our study, we come to realize that it must extend to the perception of language by groups, eventually leading us, as linguists, to reflect on our own views of how language is organized and how we go about our work. In current practice, our mainstream linguistic theorizing is based on formulating rules that purport to 'explain' language. We try to make these rules as non-personal as possible. Not unrarely, we weave them together into grammars or bits of grammar. In doing so, we produce artifacts that take on an existence that is independent not only of us but also of the subjects who initially generated the raw material for our analysis. In the process we lose sight of how the body of data came to be an acceptable one. Some utterances we accept as 'well-formed' and others we reject as ungrammatical. Among the well-formed, however, there may be some utterances that we would reject simply because they are extraneous to our point. As we construct our grammars, it becomes easier for us to reject some utterances as ungrammatical or at least 'questionable' because they do not fit the emerging model. In other words, the point we are attempting to make leads us to shape the body of data that is relevant to it. This reciprocity of data and theory is only one manifestation of the linguist's particular brand of metalinguistic awareness.

Training in linguistics ought to heighten one's consciousness of even the most elementary of terms. It is good, then, that theoreticians like Dixon (1979) and Cole et al. (1980) pause in their grammatical deliberations in order to fix a firm definition for the notion of 'subjecthood.' Dixon derives his definition from functions perceived to be universal. He observes that the agent or potential agent of an action in a transitive sentence is usually unmarked, put in the leftmost position and is non-deletable. In the so-called 'ergative' languages, however, the subject

ends up being treated like an object. By clarifying what 'subject of sentence' means, Dixon finds a way to explain ergativity. Cole and his colleagues prefer to base their definition of subject on syntactic behaviors such as the ability to trigger reflexivization in languages where only subjects control this process and to undergo certain rules of deletion and raising (Cole et al. 1980, p. 720). The point to be made here is not to find an absolute definition for the term but rather to illustrate the on-going need of linguists to examine their use of the tools of their trade. While anyone may occasionally engage in offering explanations about how language works, only linguists do it professionally and consistently. The necessity to explain language in terms of language places a burden on linguists that is not shared by professionals in other fields where it is easier to tell the difference between the object of study and the instruments used to carry out the study. Despite this handicap, we linguists cannot shy away from attempting to understand how metalinguistic awareness affects linguistically unsophisticated people as well as ourselves. Whether we like it or not, we linguists are part of human society and we share our humanity with the people whose languages we investigate. Ours is a human science, as Victor Yngve (1986) has so eloquently pointed out. With what follows in this paper, I can only hint at the pervasiveness of metalinguistic awareness in human endeavors. I hope that my remarks will lead to more in-depth studies.

Ten years ago, H. Seliger (1979) conducted an experiment with children to determine the extent to which their awareness of language structure matched their actual linguistic competence. He focussed on the indefinite article in English and he tested three groups of children: monolingual speakers of English, bilinguals and learners of English as a second language. He found no correlation between their abilities to use the correct form of the indefinite article (a before a word beginning with a consonant and an before one beginning with a vowel) and their efforts to state the correct rule. One child, for example, attempted to explain the different choice of a before leaf and an before apple in terms of edibles versus non-edibles ("an apple you can eat, a leaf you can't"). Other attempts at explanation included the categorizing of words into living things vs. non-living things and 'people-references' vs. 'non-people-references.' Seliger concludes that even incipient learners of a language possess far more knowledge than could ever be stated clearly and coherently by them. Yet rules

do play a part in second-language learning, at least as mnemonic devices "to retrieve features of an internal grammar rule..." (Seliger 1979, p. 369).

As of late, some researchers in second-language acquisition have questioned the role of explicit grammar in the classroom, even as a mnemonic device. Krashen (1982, p. 89), for example, describes grammar as a synonym for conscious learning, i.e., as a monitor for learners who apply it when editing their output in the target language. Another use for grammar is for 'language appreciation' which in Krashen's interpretation is another name for linguistics. This deprecation of grammar is consistent with Krashen's efforts to draw a distinction between acquisition and learning. Acquisition is supposedly an innate process in humans that follows a universal order, with some elements of language learned before others. Drawing attention to grammar is part of conscious learning which, according to Krashen, never can become acquired knowledge. The learning/acquisition dichotomy has significant implications for the role of the instructor. Krashen's conclusion is that the best, if not the only, role for the teacher is to provide 'comprehensible input in the target language' in order to feed the student's innate acquisition device.

In a study done subsequently by L. Bashear (1988), it was found that increased awareness of the grammar of a language may facilitate acquisition and may vary over time in its significance for the student's progress. Students of two foreign languages at the University of Delaware were queried about specific rules of grammar both at the time that they were being exposed to the aspects of the language to which these rules pertained and also at a later date when the students were generally more proficient in the language. Bashear found that being explicit about the rules may promote output when the students are first exposed to them but as proficiency increases, students tend to behave more like fluent speakers of any language, that is, they tend not to be able to formulate rules about aspects of language they control and use properly.

To add even more grist to the metalinguistic mill, there is evidence that the intuitions of native speakers about their language may be substantially different from those of nonnative but highly fluent speakers of the same language. Coppieters (1987) gathered the pronouncements of both kinds of speakers with reference to French. The points at issue in Coppieters' study were (1) contrasts between the tenses the French call the

imparfait and the passé composé, (2) the uses of the the pronouns il and ce, and (3) placement of the adjective before or after the noun being modified. Coppieters found that while both types of speakers made correct decisions in actual use of the forms, the two groups had different explanations for what they said. The native speakers explained their choices in semantic/pragmatic terms while the non-natives preferred explanations in terms of grammatical structure. The preference for more formal explanations by the non-native speakers might suggest that this group never actually acquired the language but become highly proficient learners of it. Another explanation--which I prefer--is that the non-natives may have indeed acquired the language. Their formally heightened awareness of the structure of the language may or may not play a part in how they speak it but reflects, instead, how they were exposed to it.

Prompted by Seliger's experiment and intent on pursuing the implications of Krashen's facile definition of linguistics as 'language appreciation', I decided to conduct an informal study of my own on the factors that condition the choice of the a/an variants for the indefinite article in English. Whereas Seliger's experiment concerned primarily one or two-syllable words, with the stress on the first syllable, I asked myself what people might do when faced with longer words beginning with aspirate /h/ and with stresses on the second or third syllable. I concocted eight phrases, as follows:

1. ___ terrible end
2. ___ onerous task
3. ___ historical event
4. ___ horrendous result
5. ___ harmonious solution
6. ___ hedonistic inclination
7. ___ humanistic pursuit
8. ___ heroic age

I selected eight native speakers of English, five females and three males, ranging in age from 20 to mid fifties. Each was asked to say the phrase and then repeat it, with either a or an before it. As the following table shows, there was variation in response with phrases numbered 3, 4, 5, 6, and 8. My prediction was that there would be no variation in either 1 or 2, since the environments are the same as those used by Seliger. I expected some variation in all other phrases and was surprised not to find any in phrase no. 7. Later, I came to the conclusion that

the choice of the non-nasal variant (a) before humanistic must be triggered by the relatively greater intensity of aspiration before the complex vocalic nucleus /yuw/ of the adjective. In all other cases, the subjects chose either to reduce the degree of aspiration (and therefore use an) or not (allowing them to select either the stressed or unstressed variant of the non-nasal indefinite (/ey/ or /ə/)). Two of the subjects were trained linguists of long-standing in the field. Only one of them offered a comment on his choice of variants, stating that he always used a before words beginning with pronounced h. All subjects hesitated before deciding on either a or an for phrases no. 3, 4, 5 and 6. When asked for an explanation of why they made their particular choices, only one other subject, a non-linguist, made an attempt to answer. Her opinion was that it had something to do with the length of the word.

	SUBJECTS: I	II	III	IV	V	VI	VII	VIII
P	1. <u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>
H	2. <u>an</u>	<u>an</u>	<u>an</u>	<u>an</u>	<u>an</u>	<u>an</u>	<u>an</u>	<u>an</u>
R	3. <u>an</u>	<u>a</u>	<u>an</u>	<u>an</u>	<u>a/ey</u>	<u>a</u>	<u>an</u>	<u>a</u>
S	4. <u>a</u>	<u>a</u>	<u>an</u>	<u>an</u>	<u>a/ey</u>	<u>a</u>	<u>an</u>	<u>ey</u>
E	5. <u>an</u>	<u>a</u>	<u>a</u>	<u>an/a</u>	<u>a</u>	<u>a</u>	<u>an</u>	<u>ey</u>
S	6. <u>a</u>	<u>an</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>ey/a</u>	<u>ey</u>
	7. <u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>	<u>a</u>
	8. <u>an</u>	<u>a</u>	<u>a</u>	<u>an</u>	<u>a/ey</u>	<u>an</u>	<u>an</u>	<u>a</u>

TABLE: Indefinite Article Variants

(Note: the symbol a in the table stands for /ə/)

There are several conclusions to be drawn from this study. First of all, there can be more to linguistics than mere 'language appreciation'--at least for the professional linguist who is compelled to find explanations for variation in language and then determine its effect on important activities in society such as learning to speak. Secondly, people's variation in language appears to be inherent in society and may or may not be used by them for purposes beyond the norms of discourse. In the case of the a/an distinction, no one notices the variation, not even linguists when they are

functioning as participating members of society. In fact, the question remains for us to consider: why is some variation socially significant while other variation goes unnoticed, even by experts in linguistics? The question can be rephrased in terms of education. Most countries include in their educational systems a subject that carries as its title the name of the language spoken by the majority of people in that country. In the United States, for example, millions of monolingual speakers of English must study a subject called 'English' which is central to the instructional process. Points of grammar are included in the curriculum, presumably not because the students cannot use them in speech but because someone has decided that their attention should be drawn to them. As a result, metalinguistic awareness becomes politicized.

The politicization of metalinguistic awareness extends to the effort in several countries of the world to name one language as the 'official' one over others that might be spoken within national boundaries. Prominent people in the U.S. (including S. I. Hayakawa) have contributed much to raising the general public's awareness of the English language as distinct from other languages. The 'English Only' movement promotes English as the only permitted language in many functions while disenfranchising other languages. While many states have already passed 'English Only' statutes, no one, to my knowledge, has attempted to decide what version of English is to be the officially approved one. A similar problem confronted the Indonesians. Their solution was to rename one of the major dialects Bahasa Indonesia. The same route is being followed in the Philippines where Tagalog, a regional language spoken around the capital has been renamed Pilipino. Not being able to speak Javanese retitled 'Bahasa Indonesia' in Indonesia or Tagalog under its new name 'Pilipino' in the Philippines verges on the unpatriotic. In a similar vein in the United States, the state of Illinois at one point in its legislative history declared 'American' to be its official language. The same nationalistic spirit apparently moves Brazilians who claim to speak 'Brasileiro' and not Portuguese.

The raising of awareness about language can serve the interests of pan-nationalism as well as nationalism. The Arab countries of the world readily make a claim to having one language among them, even though there is considerable variation among their local dialects. Their situation has been called 'diglossia'. What they really share is basically a written language

more accurately called 'classical Arabic.' Since the Arabs discount the varieties they speak as real languages, those among them who can read and write could be called bilinguals in spite of themselves. The situation in Central and South America is another case in which a language functions pan-nationally but it differs from that of the Arab countries in two important ways: (1) the name of the language (castellano) excludes reference to the country that originally colonized the area (Spain) and (2) the extension beyond national boundaries includes both speech and writing.

In this paper I have tried to show the pervasiveness of metalinguistic awareness in dealing with language matters. It is a factor that linguists must take into consideration when theorizing about language. It affects the perceptions of native as well as non-native speakers about the rules that supposedly guide their verbal behavior. It also plays a significant role in shaping national identities through formal education and the socio-political activities of national governments. Given the enormity of the phenomenon, linguists are well-advised to question all approaches that reduce language to sets of constrained data. It is sad to say that, except for a few practitioners in the field, linguistics is now in an era of severe reductionism. I cannot help but recall Hockett's efforts of several decades ago (Hockett 1968) to head off reductionism in his monograph, The State of the Art. Indeed, not all the sentences of a language can be constrained in a limited set of rules. Moreover, to continue the effort to do so is leading our field away from the humanistic orientation it should have when dealing with something as all embracing to humans as language is.

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ZAPOTEC--LANGUAGE OR LANGUAGES?

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Official lists of the indigenous languages of Mexico frequently include one of the languages of the state of Oaxaca as "Zapoteco," sometimes with further explanation that there are five different "dialectos." In reality, however, there are not just five different types of Zapotec, but many more, perhaps as many as forty. And the more-or-less forty are not mutually intelligible. They are clearly a family of languages rather than a language with various dialects.

This paper proposes to demonstrate some substantive differences between two Zapotec languages: Isthmus Zapotec (IZ), spoken along the Pacific coast of the Isthmus of Tehuantepec, and Rincon Zapotec (RZ), of the Villa Alta mountain area. The specific data included here are from the towns of Juchitan (Isthmus) and Yagallo (Rincon).*

1 Phonology. The phoneme inventories of the two languages share five vowels, eighteen consonants, and two semivowels:

Vowels:

i u

e o

a

Consonants:

p t ʈ k

b d ɟ g

s ʃ

z ʒ

n ñ

nn (fortis)

l

ll (fortis)

ʎ

Semivowels w y

In addition to these phonemes, the RZ inventory includes two vowels and three consonants which are absent in IZ. The vowels are the high central /ɨ/ and low front /æ/. The consonants are two alveolar affricates /c/ and /z/, (written here with the digraphs ts and dz) and a uvular fricative /R/.

IZ has three phonemes which do not occur in RZ: /m/ (rare in native words in IZ, only in Spanish loans in RZ), trilled /r/ and /h/. Since these phonemes are extremely rare, they will not be included in the chart for comparison.

A single combined chart of the two inventories will show these similarities and differences. The boldface symbols represent the phonemes which occur only in RZ.

Vowels	Consonants
i ɨ u	p t ts č k
e o	b d dz ǰ g
ae a	s š R
	z ž
	n ñ
	nn
	l
	ll
	ɣ
	w y

In both languages, the vowels are modified in two ways: with glottal closure (written V') and laryngealized or rearticulated (written with double vowel VV). The following words illustrate these contrasts in the two languages:

RZ		IZ	
na	'ripe'	na	'says'
na'	'there, that'	na'	'(his/her) hand'
naa	'today, now'	naa	'I, me'
bii	'child'	biiw	'flea'

Most Zapotec languages distinguish the stop series by fortis vs. lenis. Fortis stops are strong and voiceless; lenis stops have a weaker pronunciation and vary between voiced and voiceless. RZ, however, distinguishes these consonants only by voicing.

The fortis nasals and laterals (written nn, ll) are longer

than their lenis counterparts. They occur only in medial position following a stressed syllable. [1]

The phonemes in these two languages also have differing distribution. IZ has no final consonants in native Zapotec words, while RZ has at least ten consonants in this position. RZ has a number of vowel clusters, e.g. /eae, ea, ie, ia, oae, oa/, while IZ has only semivowels /y/ and /w/ in combination with vowels. RZ also has two different vowels separated by glottal stop, thus forming two syllables, while IZ has only like vowels laryngealized, functioning as a single syllable. Examples:

RZ	IZ
rae'u 'we'	naa 'I/me'
ru'a 'my mouth'	zee 'fresh corn'
ru'ae 'his/her mouth'	rii 'water jug'
rɛ'ae 'is seated'	doo 'rope'
ni'a 'my foot'	buu 'charcoal'
ni'u 'your foot'	

Most Zapotec languages, including IZ, have distinctive contrast of tone, but the various investigators who have studied RZ affirm that this language does not have tone contrasts. [2] Note the following contrasts in IZ: [3]

nà (low)	'says'
ná (high)	a respect title for married women
nǎ (upglide)	'(his/her) hand'
nàná (low-low)	'hurts'
nàndá (low-high)	'hot'
nàndǎ (low-upglide)	'bitter'
nànáš (low-low-low)	'sweet'
nàláśé (low-low-high)	'thin'
nàlátě (low-low-upglide)	'unoccupied'

2 Morphology. In general, Zapotec morphology is comparatively simple in terms of the number of affixes, since the principal modification is by means of clitics or free forms. Allomorphic variation in the verbs is very complex, and these will not be considered here. [See Marlett and Pickett, 1987.]

2.1 Verbs. Verbs are modified principally with respect to two categories: person (subject and object) and aspect.

2.1.1 Subject marking. These two languages are very different in the ways they mark subject person. In RZ the subject pronominal forms are suffixes, and in the third person they are in agreement with noun phrase subjects:

rulaba-bi'	biido' na'	rulaba-bi'
reads-3f	child that	reads-3f

In IZ, however, the pronominal forms are enclitics, and there is no agreement with noun phrase subjects; rather, the two are mutually exclusive:

ruunda ba'du ka ruunda -be [4]
reads child that reads -3h

The following chart presents for both languages the person and number distinctions, together with the abbreviations used in the glosses of the examples. (In cases where there are variant forms, only one has been chosen.)

Person	RZ	IZ
First singular (1s)	-a'	a'
Second singular (2s)	-(n)u'	(l)u'
Third singular		
--familiar (3f)	-bi'	---
--masculine respect (3m)	-ae'	*be (3h)
--feminine respect (3fe)	-nu	---
--animal (3a)	-ba'	*me
--inanimate-indefinite (3i)	-Ø	*ni (inanimate)
First plural inclusive (1pi)	-ru'	nu
First plural exclusive (1pe)	-tu'	du
Second plural (2p)	-li'	tu
Third plural (3p) [5]	-gaka	ka
	plus 3	

*(Under certain discourse-controlled conditions, zero may replace any one of these three third-person forms. Note also that the form ni in IZ is only inanimate, while the corresponding Ø form in RZ may include persons, but with indefinite reference.)

2.1.2. Object marking. The grammatical structure of object marking is also distinct in the two languages. In IZ the object pronominal is always an independent form (except for 3i, which in general is expressed by the clitic form ni). In RZ, however, the third person can be either an independent form or a suffix. Compare the following examples:

RZ

bi-lee-da'-nu
C-see-ls-3fe

or: bi-lee-da' laenu
C-see-ls her

"I saw her."

IZ

b-iiya laa -be [6]
C-see,ls X -3h

2.1.3 Aspect. In all of the Zapotec languages, aspect is indicated by prefixation. There is a great variety among the languages, however, in the number of aspects employed, their semantics, and their lexical forms. Mixtepec Zapotec seems to have the greatest number, with nine distinctions. Atepec has the smallest number, with only three. IZ has eight and RZ five. The following chart shows the differences between IZ and RZ as to aspect names, forms and meanings. (Each aspect is represented by only one allomorph.)

Aspect	IZ	RZ
Habitual (H)	r-	r- Habitual (H)
Progressive (PR)	ka-	
Completive (C)	b-	b-
Future Incompletive (F)	z-	i- Incompletive (I)
Potential (P)	g-	wa-
Unreal (U)	n-	---
Repetitive Past (RP)	wa-	---
Stative (S)	na-	na-

HABITUAL in IZ is used to indicate customary action in either present or past time, depending on the context. PROGRESSIVE marks action which is/was going on, again depending on context. In RZ, however, both usages are included in a single (HABITUAL) morpheme. COMPLETIVE, marking the termination of the action, either in past or potentially in the future, is very similar in the two languages.

There are four morphemes which mark action not yet completed (FUTURE INCOMPLETIVE in IZ, INCOMPLETIVE in RZ, and POTENTIAL in both). They vary greatly in their usage among the Zapotec languages. Lack of space precludes a description of these differences. [7]

RZ does not have a morpheme equivalent to the UNREAL of IZ. It employs various of the aspects to express this concept of action not completed in the past.

The REPETITIVE PAST prefix *wa-* in IZ (labelled "perfect" in previous publications) designates action occurring in the past that is repeated for a period of time, either positively or negatively. It appears that only Isthmus and Santo Domingo Albarradas have this morpheme. Examples from IZ:

way-uni -be -ni Čonna tiru "S/he has done it
RP-do -3h -3i three time three times."

Čonna gubiĵa ke way-aw -a' "I haven't eaten for
three day neg RP-eat -1s three days."

STATIVE has the same form (*na-*) in the two languages, but there are a number of differences in their usage. The main focus of *na-* in RZ is on the result of a process:

na-gul-ae' "He has gotten old."
S-old-3m

But in IZ such an expression would simply indicate his present state:

na-yoošo -be "S/he is old."
S- old -3h

To express the process of becoming old, IZ would use the completive:

ma b-yo'šo -be "S/he has gotten old."
already C-old -3h

2.2 Nouns. Nouns are marked for possession and pluralization. Possession person markers are the same forms as the verb subject markers (suffix in RZ, enclitic in IZ). The same structural difference also occurs here--agreement of person suffix and noun possessor in RZ, no such agreement in IZ. Examples:

RZ	IZ
Š-tidza'-bi' Maria	Š-tiiĵa Maria
POS-word-3f Mary	POS-word Mary

"Mary's word (or story)"

Pluralization also has systemic differences among the various Zapotec languages. This subject is covered in detail in an article in LACUS Forum 12 (Marlett and Pickett 1986). RZ and IZ differ in two of the three features described there.

3 Syntax. Two major differences in syntactic arrangements are found in declarative and interrogative yes/no sentences.

3.1 Declarative sentences. All Zapotec languages have a V-initial basic word order. In IZ the unmarked order is VS0. In contrast, RZ has an unmarked order with the subject final. As mentioned above, RZ has duplication of bound and free subject, while IZ does not. Examples:

RZ			IZ		
V	O	S	V	S	O
u-di'i- h	lo-ru'	gubidza	zu-ni-na	gubiŷa	lu -nu
I-hurt-3i	eye-lpi	sun	F-do-hurt	sun	eye -lpi

"The sun will hurt our eyes."

3.2 Yes/no questions. All Zapotec languages express yes/no questions by adding an interrogative particle to the normal-order declarative sentence. IZ has this particle postposed. [8] RZ, and almost all the others, have it preposed. The particle in IZ is la; in RZ it is ba. Examples:

RZ		IZ	
ba	r-un-u' ŷin	(ñee)	kay-uni -lu ŷiñña la
?	H-do-2s work	(?)	PR-do -2s work ?

"Are you working?"

4 Lexicon. One of the greatest differences among the Zapotec languages is that of lexical items. As we have already seen, there are many differences in bound morphemes. Independent words also differ greatly. Certain words, such as the numbers and words for tortilla, fish, meat, tree, water, dog, chili, squash, word and eye, are usually sufficiently similar to be easily recognized, but many others are recognizable only by comparative analysis. Still others do not seem to be cognates in the present stage of the languages. The following RZ and IZ examples are limited to two which are exactly alike, two which are similar and two which are completely distinct. [9]

	RZ	IZ
"tree, wood"	yaga	yaga
"water"	nisa	nisa
"house"	yuu	yoo
"moon, month"	beo'	beew
"hill"	gi'a	dani
"cold"	ziaga	nananda

Conclusion: The data presented here: (1) demonstrate the presence of substantive differences between the IZ and RZ

languages and 2) suggest that such variants should be regarded not as dialects but rather as members of a family of Zapotec languages. These data also serve as a basis for further investigation comparing various Zapotec languages.

NOTES

*I am indebted to Robert Earl for the data from Yagallo.

1. In various other Zapotec languages, the fortis-lenis contrast in nasals and laterals also occurs in initial position.

2. Morris Swadesh, Robert Earl, Vera Mae Alleman.

3. In the IZ data in the remainder of this paper tone is not indicated. The following are cognates in RZ for some of these words; all have the same tone:

Rna "says"; naa "hand"; la "hot"; silá' "bitter".

4. In the examples from IZ, the person enclitics are written as separate words preceded by hyphen.

5. Third person plural in RZ may also be expressed with the prefix la' or a combination of this prefix and the suffix -gaka.

6. First person singular in this verb is indicated by high tone in the final vowel. The morpheme laa is a base form for independent pronouns, marked in the glosses by X.

7. An extensive discussion of these four morphemes is included in a longer article on RZ and IZ, in Spanish, to be published in a volume in honor of Jorge Suarez [Pickett, in press]. In the future, we hope to make a thorough study of these usages in the other Zapotec languages.

8. There is also an optional preposed particle ñee.

9. Rapid inspection of the RZ dictionary-in-preparation identified a total of twenty-three words which were exactly alike (other than tone) in the two languages, and less than 20 percent which were similar.

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LINGUISTIC AGENCY AND THE NORMATIVITY OF LANGUAGE

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It is understandable that we linguists almost never begin a paper by citing a member of the Royal Family (except, however, those linguists who think that the expression "Royal Family" refers to the tenured faculty of the linguistics department at MIT). Nevertheless, on this occasion I do have that rare opportunity of referring to a quite prominent member of the British Royal Family, Prince Charles, who has lately declared himself to be concerned about declining standards in the use of correct English by his subjects. Indeed, he has claimed that even his own staff use English so improperly that he himself has to correct the letters sent from his office. English grammar is taught, in the Prince's words, "so bloody badly" that it has become a fundamental problem in English culture.

The question to be addressed by the present paper is the following: how are we linguists to respond to the views thus expressed by so influential a figure as the Prince of Wales? Those few linguists who have already attempted to respond have tended politely to instruct the Prince about the difference between normative and descriptive linguistics and about the linguistic equality of all idioms. Some have even attempted to explain that the normative terms "proper", "correct", "poor", "good", "bad", and so on are inappropriately applied in characterizing an individual's or a group's language.

In so doing these linguists have simply reiterated a few of the fundamental principles of modern linguistics: in particular those that shore up the divide between the 'bad old' normative approach to language and the modern scientific and anti-normative approach which dominates linguistics today. But it is, of course, precisely this divide that the Prince is complaining about. He, or those who inform him, are well aware that the teaching profession has been strongly influenced by the principles and methods of modern scientific linguistics, and it is the effects of this influence that they so greatly deplore. From

the Prince's point of view there is a right and a wrong way to speak and write English (or any language), and the terms "correct", "right", and "proper" are appropriately applied in characterizing forms of expression. Furthermore, academic idealists who ignore the intrinsically value-laden essence of language are not only socially irresponsible (as a few modern linguists might just admit) and educationally harmful; they also misrepresent the truth.

What we have, then, is what the French call a 'dialogue des sourds'. It is not that the two sides in this debate disagree on points of fact or even on questions of interpretation. They simply feel that the other side's way of talking about language makes no sense. Someone who believes that there is a correct and an incorrect way of pronouncing, that there are right and wrong ways of joining words into sentences, and that there are better and worse varieties of English simply cannot understand the scientific linguist who says that the first principle of language-study is the rejection of such terms of value-judgment and of the normative perspective they imply. At the same time, the proponent of scientific linguistics can make no sense of the arguments of the normativist who thinks that the concepts of 'right' and 'wrong', 'correct' and 'incorrect' are of the very essence of language and linguistic knowledge.

This situation might not at first seem to provide cause for alarm: there are, after all, other academic disciplines which take among their first principles positions which deny some crucial commonsense belief about their subject-matter. Economics is a good example, since it rejects the commonsense assumption that material objects have a single true value. But what is different about the 'dialogue des sourds' between the linguistic scientists and their normativist opponents is reflected in the very fact that the Prince of Wales has felt compelled to enter the dialogue. Linguistic issues have gained a growing political prominence in recent years. And yet when politicians turn for advice to the institutional experts on language, the latter withdraw into their ivory towers claiming that the issues themselves, because of their normative presuppositions, are illusory.

One can easily understand the frustration thus evinced by those such as the Prince of Wales. For one thing is for certain: in spite of years of anti-normative rhetoric on the part of academic linguistics, the political significance of normative linguistic issues has not faded. And yet all the linguists have to say about this is that they have

nothing to say. So what is distressing about the fact that there is a 'dialogue des sourds' between political and academic authorities on language is that it leaves the crucial political decisions about language in the hands of politicians who cannot be informed and advised by those who devote their professional lives to the study of language and who therefore should be expected to provide some knowledgeable advice on linguistic issues.

But it is more than the self-inflicted political impotence that is distressing in the anti-normative stance of modern linguistics. And here again I take the side of royalty against the scientists. For political expedience is not the only reason why we should recognize normativity as an essential feature of language. An even more compelling reason is the desire for descriptive and explanatory adequacy. Although I do not think much of Prince Charles' claim about declining standards in English, I wholeheartedly agree with what his and other normative discourses on language presuppose: i.e. that the concepts of correctness, relative value, and propriety are essential to the human experience of language. Consequently, the scientific study of language must redefine itself and give central attention to the normative character of language, not only so that it can avoid the charge of social irresponsibility, but also so that its analyses can have some correspondence to how linguistic agents themselves experience and make sense of language, a methodological recommendation first urged on the modern discipline of linguistics by its founder Ferdinand de Saussure.

However, modern scientific linguists (including Saussure himself) have been prevented from following this recommendation because of their unwavering faith in an institutional myth. This "language myth" -- as Roy Harris has argued (Harris 1981)-- has many ramifications; included among these is the intentional neglect of the normative character of language. The language myth maintains that linguists, like the practitioners of many other academically respectable disciplines, have as a scientific object something which is independent of the voluntary acts of individuals. This object -- variously conceived as langue, universal grammatical principles, the sign, linguistic competence, or a particular language -- is not subject to the will of individual agents and is therefore independent of individual and social efforts to constrain the individual exercise of the will. This in turn means that the methods which individual agents adopt to integrate their linguistic acts within the normative (as well as non-normative) features of

the situational context fall outside the purview of modern linguistic investigations. Furthermore, because linguistics studies not the linguistic act but the abstract (or psychological or Platonic or social) object which is claimed to underlie that act, it ignores the normative influence of society in shaping and controlling the linguistic acts of individuals. Consequently, it makes recognition of the political dimension of language impossible.

From the point of view of the language myth, there is a category mistake made in the use of normative terms such as "good", "correct", "proper", and the like in the characterization of the language of any individual or group. A language, because it is conceived to be independent of the will and therefore also of normative attempts to constrain the will, can be neither good nor bad, correct nor incorrect. It just is what it is; and the linguist's task is to describe it, not to hold it up against an illusory scale of correctness, propriety, and imagined value.

Thus far I have argued that one problem with a linguistics based on what Harris calls "the language myth" is that it ignores an essential feature of language, namely its normative character. Therefore, a redefined linguistics should take into the center of its focus linguistic normativity. But it might fairly be asked what is meant by the normative character of language, how it can be studied, and what such a study might promise. The remainder of this paper will address these questions.

In bringing the normativity of language into focus we recognize that linguistic acts occur in a context which is infused with questions of what one ought to do, of what is right, of what is correct, of what one should say in this or that context, and of what is wrong, incorrect, and 'not good English'. That is, we ordinarily treat linguistic acts as something that we value: as something the performance of which matters to us. (And it is my argument that we cannot explain the structure of language unless we take account of this.) All this is reflected in the way that language is taught to foreigners and children, in how expressions or constructions are explained to those who are not familiar with them, in how speakers/writers are corrected when they do something said to be 'wrong', in how these latter will justify their verbal acts should they object to being corrected, and in the status given to such normative authorities as teachers, dictionaries, acknowledged 'good' writers, and the like. For instance, when I tell a child that 'soporific' means 'tending to

produce sleep', I do not give this statement the descriptive force of a generalization about a behavioral regularity; instead, I give it the normative force of a rule. What this means is that, if the child replies that when her friend Johnny uses 'soporific' he means 'poisonous', I do not treat her statement as counter-evidence to a descriptive generalization. Rather I treat it as evidence that Johnny is wrong about the meaning of 'soporific'. Analogously, the rule in tennis that players switch ends after every odd game is not disproven by some players who do not follow that practice: rather we treat what they are doing as wrong, mistaken, and 'not good tennis'. It is the way we treat the statement about switching ends -- how we support it, explain it, justify it, etc. -- that gives it a normative force. It is this which makes it not the description of a behavioral regularity, but the formulation of a rule or norm informing us how to play tennis properly. Similarly, language is taught, explained, justified, and corrected with statements which we also treat as carrying a normative force.

Thus it is not in the sounds themselves or in their syntagmatic combination that the normative character of language lies, but rather in the characteristic place we give to the utterance of sequences of sounds in the contexts of ordinary interaction. If it never mattered to us what significance people gave to sounds and written marks, nor how they chose to combine them, then language would not indeed be a normative practice. But language as such would be nothing like we know it to be. To understand the normative character of language, and so to understand an essential feature of language as a human practice, we must study it as integrated in the forms of life of which it is an inseparable component.

In this case, it may help to bring the normative character of language into relief by comparing it with a way of studying language which does separate linguistic products from the circumstances of their production. Imagine a Martian arriving on Earth long after human civilization has disappeared. She finds in the middle of a wrecked building hundreds of pages of what she takes to be printout from a computer. She analyses the sequences of symbols that are printed therein, taking as her goal the reconstruction of a hypothetical computer program which could have produced those sequences. Perhaps she finds similar piles of printout in other bombed-out buildings and so attempts several such reconstructions. On her assumption that each is the output of a different program, she may even attempt to determine the formal

principles common to each of the hypothetical programs she reconstructs. Indeed, she might hope that she can uncover principles of such generality (e.g. the "A-over-A principle") that they can be plausibly attributed to the hardware parameters of Earthling computers.

I hope that the sense of my analogy is clear. It is, I believe, easy to understand how such a project might hold a visiting Martian spellbound and how a Martian could hope that it would offer epistemic access to aspects of a culture otherwise hidden from Martian observation. After all, when all you have is a few piles of computer printout on which to base your investigation, you might as well have a go.

But if my analogy is clear, then two points (at least) should emerge. First, the act of producing human language is nothing like the production of computer printout. Computers have no choice when or what to produce. Computers are not agents responsible for what they produce, and they are not treated as responsible agents. They do not have the option of breaking the rules of the programs under which they are operating. Nor are they subject to moral sanction. Their output is not held morally accountable by those who receive it. Computers do not have the choice of how to integrate their production within the (social and situational) circumstances in which they are made to produce. In fact, we take it to be one of the essential as well as one of the most useful characteristics of computer processes that they are completely determined. Yet it is only in the rarest of circumstances that we would ever speak of human linguistic production as completely determined. A way to focus on this point is to consider the familiar programmer's maxim: "Computers don't make mistakes; people do".

It is because the actions of a computer are determined that they can conform to the actions of another computer and that they can be regular. Two computers of the same type, programmed in the same way, will produce the same responses to the same stimuli. And, if given the same stimuli, they will produce the same response over and over again. Their conformity and their regularity are to be explained by their being physically determined.

This reveals a vital weakness in a linguistics which focusses its study on linguistic products rather than on the performance and circumstances of production. For an analytic method which studies only the products of linguistic acts (recorded utterances, grammaticality judgments, written texts) cannot distinguish between products produced by voluntary

acts subject to normative constraint and products produced by a physical determinism, such as output from a computer. In the two cases the products look the same, although explaining one should be a very different matter from explaining the other.

The second point to make about the analogy is that we have as available data for linguistic research much more than a product analogous to computer printout. Our analytical circumstances are not restricted in the way that our imaginary Martian's were. We can observe people producing language in interaction with other people within particular circumstances. We can watch them being taught how to speak, being corrected for making what are called "mistakes", and being insulted, praised, classified, sanctioned, and even punished by others for the characteristics of their speech. We can investigate the complex network of beliefs that different groups entertain about the powers, purpose, and value of different features of linguistic acts. And we can inquire into the connections between those beliefs, their articulation and propagation, and the changing and varying characteristics of linguistic production itself. We can, that is, study the interaction of linguistic attitudes and linguistic behaviour in the political marketplace of everyday life. That is, we can study language as a normative activity. There is quite obviously nothing comparable in the study of computer printout.

But due to the influence of the language myth, modern linguists do not study language as a normative activity. Instead, in their efforts to describe the (abstract, psychological, or social) object underlying linguistic acts, they study sentences, words, and texts: the residual products of linguistic acts, abstracted from the situational and normative circumstances of their production. Moreover, hardly differing from my imaginary Martian, many linguists confine their attention to the analysis of the syntagmatic concatenation of units which such texts display. One thing is for certain: such an approach rules out even the possibility of inquiry into the contexts of linguistic production to see if features of the linguistic product could have their explanation in the normative circumstances of production.

In reply to my recommendation to study language as a normative phenomenon, the arguments of the recalcitrant scientific linguist are easy to imagine. In particular, I will be accused of neglecting the scientist's maxim of analysis: divide and conquer. That is, scientific linguists may concede that

language is a normative phenomenon but continue that it possesses other vital characteristics too. And they will argue -- as have Chomsky and Saussure -- that if the various kinds of properties language possesses are not distinguished and analyzed separately, then linguistic phenomena will be too messy and too confusing for any of it to be given a satisfactory analysis. Consequently, in a methodological maneuver Harris has called "segregationalism", scientific linguists choose particular features of language -- for instance, the combinatory properties of certain kinds of units -- and focus their investigations exclusively on these features. And they leave for another day the integration of the results of these investigations with those from the investigations of other features.

My reply to this objection is a simple one. Once we recognize that the formal structures and patterns which linguistics has long sought to explain cannot be explained in abstraction from the normative (and other) circumstances of their production, the value of the divide-and-conquer strategy diminishes. For the formal appearance of the language product is but an epiphenomenal residue of normative and situational forces operating in the circumstances of production. What this means is that the essence of language does not reside in the linguistic product which is the focus of modern linguistic investigations but in the activity of language production and in the forces, normative and other, which help to shape that activity. It is there that we must search for the explanation of any of the properties of language.

My argument then is that only by recognizing and investigating the normative character of language, a character residing not in the linguistic product but in the circumstances of linguistic production, will the scientific study of language ever achieve anything more than an illusion of explanatory adequacy. Furthermore, it is linguistic normativity which prescriptive authorities such as the Prince of Wales implicitly or explicitly recognize and which their own authoritative discourses presuppose. Consequently, if scientific linguistics is ever to offer an effective reply to the authoritarian and often oppressive purposes of such discourses, it will only be by incorporating linguistic normativity into the heart of its analytic program.

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III

SYNTAX AND MORPHOLOGY

HOW ARE PAST PARTICIPLES TO BE TREATED THEORETICALLY AND/OR PEDAGOGICALLY?¹

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1. Introduction

Past participles in English seem to be treated differently according to the dictionary consulted.² This difference arises mainly from different ways of identifying past participles; i.e. whether some of them should be regarded as verbal past participles or as full adjectives. The former type will not have to be listed in a dictionary, because they can be predicted, for instance, especially through the active-passive transformation, provided this transformation is shown to be applicable in the first place. However, the latter will have to be listed either as derivatives or as distinct headwords, because they are separate items, and cannot be predicted through the transformation. The matter is, however, not so simple, as the following discussion demonstrates.

This paper aims at drawing some tentative conclusions between adjectival and verbal past participles based on grammatical and semantic criteria. Of the criteria, emphasis is placed on 'adjective lexicalization' and its consequent effects upon the behaviour of past participles. In the course of the discussion on past participles and related matters, some consideration is given to how dictionaries should cope with these past participles.

2. Examination of the criteria

Quirk et al. (1985: 413-416) discuss some criteria for distinguishing between adjectives and past participles:

- (1) Only adjectives come after 'seem':
 - a. They seemed relieved to find her at home.
 - b. *They seemed relieved by the next group of sentries.
 - (2) When the -ed form is accompanied with a by-agent, the form is usually regarded as a past participle:
 - a. He is appreciated by his students.
 - (3) Only adjectives are modified by the intensifier 'very':
 - a. ?He is very appreciated.
- As regards the co-occurrence of 'very+adjective' with a by-agent phrase, the acceptability is greater with a by-phrase containing a nonpersonal semi-agent, than with one containing a personal agent:

a. I'm very disturbed by your attitude.

b. ?The man was very offended by the policeman.

Huddleston (1984: 320-324) discusses past participles and recognises a gradation from most verbal to most adjectival, providing the following diagram (slightly simplified for the present discussion):

Verbal			Adjectival	
B	C	D	E	
[He was]	[a rarely]	[a]broken	[a]worried[man]	
killed	heard	[vase]	[He seemed]	
[(by Tim)]	[work by	[it seemed]	worried	
	Purcell]	broken		

From the diagram above, the attributive use of (i.e. premodification of a noun by) a past participle seems to be regarded as property of the adjective, although Huddleston does not make this point clear.

According to the criteria so far discussed, the past participles given above can be arranged as follows:

	be	a	NP	seem	very
(1) killed	+	-		-	-
(2) heard	+	+		-	-
(3) broken	+	+		+	-
(4) worried	+	+		+	+

Most dictionaries list 'broken' and 'worried' as separate items, and therefore it is assumed by most dictionaries that an implicit borderline is drawn between the second and the third past participles.

Other grammarians such as Crystal (1967) propose more or less similar criteria.

The two criteria, modification by 'very' and the possibility of the past participle being placed after 'seem', reveal adjectival status. The attributive position is adjectival as well. A past participle which is more adjectival is placed before a noun, and a past participle which is more verbal is placed after a noun often together with a prepositional phrase (ex. the vase broken by John). When a verbal past participle is placed before a noun, it is usually accompanied by a (manner) adverb such as a finely wrought argument (*a wrought argument) and a newly discovered vitamin (*a discovered vitamin). Further examples from my data confirm the statement (abbreviations are shown on the last page):

a. It was close to 9 A.M., and the pleasantly appointed club lounge was quiet in contrast to the noisy, bustling terminal outside.

(W:250)

- b. The system was a reason why engines, in comparison with more generally constructed parts of automobiles, seldom failed until neglected or abused.

(W: 314)

- c. The young shabbily dressed black man whom the policeman had stopped, had been ambling aimlessly on Third ...

(W: 108)

- d. In several brightly lighted work areas, design development was in progress ...

(W: 61)

'Appointed', 'constructed', 'dressed' and 'lighted' are not listed as separate items in the dictionaries. They can be regarded as verbal past participles.

The active-passive correspondence cannot necessarily be a reliable criterion for judging the adjectival/verbal nature of a past participle. The items given before, 'killed', 'heard', 'broken' and 'worried' all display the active-passive correspondence:

- a. Tim killed her. - She was killed by Tim.
- b. Purcell rarely heard the news. - The news was rarely heard by Purcell.
- c. John broke the vase. - The vase was broken by John.
- d. Her illness worried Ed. - Ed was worried by (about/with) her illness.

Some grammarians (for example, Huddleston (*ibid.*: 442) set up a distinction between verbal (or actional) passives and adjectival (or statal) passives. The passive construction containing a by-agent phrase is verbal, and that containing no such phrase is adjectival. But a by-agent phrase is often omitted, resulting in no apparent distinctions between verbal and adjectival sentences:

- a. He was killed.
- b. The news was rarely heard.
- c. The vase was broken.
- d. Ed was worried.

The statal passive has no corresponding active counterpart. The following 'passive' examples taken from my collection seem to have no active correspondence:

- a. ... he might be amused at how few basic changes had been made.

(W: 314)

- b. I get concerned about that investment Clyde made in Stephensen Motors.

(W: 102)

- c. Lykham was delighted to have found an academic who had come to him for the facts.
(STP: 167)
- d. Mark decided he was more frightened of the Director than he was of those who might be trying to kill him.
(STP: 150)
- e. "Mrs Caefikis is worried about her status in this country."
(STP: 116)

The following 'passive' examples also have no active correspondence:

- a. ... he was determined to get down to work in the college library by half-past nine.
(DV: 99)
- b. One road section, built on level ground, was known as Serpentine Alley.
(DV: 82)
- c. Hell, he was generally opposed to gun control proposals.
(STP: 83)
- d. ... as if he expressed trouble and was prepared to meet it.
(W: 16)
- e. The Irish are supposed to be the big drinkers, am I right?
(P: 82)

These past participles will be listed as separate entries in respect of their non-active correspondence and their change of meaning, lexical as well as grammatical. These properties will be discussed later.

To bring out more clearly the distinctions between verbal and adjectival past participles, some other criteria including those mentioned before can be utilized such as 'seem _', modification by 'very', and un-prefixation, showing the results as follows:

- a. *He seemed killed.
*He was very killed.
*He was unkilld.
- b. *The news seemed rarely heard.
*The news was rarely very heard.
The news was rarely unheard.
- c. The vase seemed broken.
*The vase was very broken.
The vase was unbroken.
- (Cf. *The vase was unbroken by John.³)
- d. Ed seemed worried.
Ed was very worried.
Ed was unworried.
- (Cf. ?Ed was unworried by her illness.)

The position of past participles before nouns is a usual one, being indicative of their adjectival nature. In my data, the following past participles occur before nouns. Because of the limitations of space, I have given below those past participles which occurred two or more times (the figures in parentheses show frequency). In the column on the right, I have shown how the dictionaries treat them (an asterik means that the items are listed in the dictionary).

	AHD	Collins	Longman	Webster
added(3) ⁴			*	
advanced(2)	*	*	*	*
appointed(2)				
assorted(2)	*	*	*	
broken(4)	*	*	*	*
built(3)				*
complicated(2)	*	*	*	*
delighted(2)	*	*	*	*
deserted(2)				
distinguished(4)	*	*	*	*
excited(3)	*	*	*	*
experienced(3)	*	*		*
finished(4)	*	*	*	*
fixed(2)	*	*		*
married(3)	*	*	*	*
paid(3)				*
polished(2)	*	*	*	
proffered(2)				
puzzled(2)				
shocked(2)			*	
sophisticated(2)	*	*		*
supposed(2)	*	*	*	*
twisted(6) ⁴			*	
written(2)		*		

Attributive position usually expresses a resulted state. When a past participle is placed after a noun, the position usually expresses temporariness often requiring an agent or an adverbial phrase.⁵ Accordingly as the requirement decreases, the past participle can occur before the noun. Let me make some comments on some examples.

'Proffered' is a more verbal past participle, but it appears before the noun, as in

a. He took the proffered hand.

(P: 31)

This simply shows that the position of a past participle is often determined by contextual and pragmatic factors. In this particular example, the definite 'the' enabled 'proffered' to be put before the noun by

taking the context into account.

Something similar can be said of other examples. They have other modifiers – single adjectives or relative clauses, and these modifiers are coordinated with the past participles. Put another way, syntactic or stylistic considerations often influence the position of the past participles, in addition to their adjectival/verbal nature. The past participles given before can be arranged on adjectival and verbal poles as follows:

Verbal		Adjectival
proffered	added	advanced
	twisted	distinguished

In addition to the criteria discussed before, two more criteria – adjective lexicalization and preposition shift – should be taken into account.

Adjective lexicalization takes place as a past participle distances in meaning from its corresponding verb and eventually has become an adjective, having a separate meaning. The following examples suggest the shift of meaning:

- a. the authorities concerned
- b. Our son is engaged (to a nice woman).
- c. He gave a long and involved explanation about the matter.

Other instances which have meanings more or less different from their corresponding verbs are: advanced, celebrated, committed, distinguished, known, related, reserved and supposed.

These past participles have undergone adjective lexicalization. The evidence for this shift in meaning is confirmed both grammatically and semantically. First of all, they have no active correspondence in their proper senses: advanced ideas/a celebrated writer/a committed teacher/a distinguished politician/a known criminal/related problems/a very reserved gentleman/supposed experts.

The meanings of these past participles have moved away from the at least central meanings of their corresponding verbs. There is, however, a gradation in this shift, and therefore some past participles such as 'animated', 'confused', 'exaggerated' and 'justified' abut on the borderline.

Secondly, the extended meanings of the past participles given before are described in most dictionaries. The following examples with explanations by the dictionaries will be of some interest:

	Longman	Webster
advanced	1.far on in development 2.modern 3. <u>advanced in years</u>	1.far on in time or course 2.a.beyond the elementary or introductory b.being beyond others in progress or development
related	1.connected by a family relationship 2.connected in some way	1.connected by reason of an established or discoverable relation 2.connected by common ancestry or sometimes by marriage 3.having close harmonic connection

The change of prepositions used with the past participle to other than 'by' indicates the adjectival nature of past participles. The following are some of these examples:

- a. I never get bored with the beauty of the White House.
(STP: 142)
- b. Not surprisingly, news of her resignation filtered quickly through the industry and became known to the business press.
(SM: 295)
- c. Suddenly she was terrified of camp.
(S: 260)

Other similar examples include committed to, concerned about/for/with, delighted at/with, devoted to, disappointed about/at/in/with, excited about, interested in, pleased about/with, surprised at and worried about.⁶

3. Analysis of past participles

In what follows, I have chosen 20 past participles out of five dictionaries (AHD, Collins, Longman, Progressive and Webster), and examined them according to the criteria discussed before to see to what extent these criteria reveal the adjectival nature of the past participles. The number has been restricted mainly because of the limitations of space, but will be enough to get an idea of the properties of the past partici-

ples. The following criteria have been applied to the past participles: (1) seem , (2) very , (3) a(n) NP, (4) un-prefixation⁷, (5) the possibility of other prepositions than 'by', (6) adjective lexicalization⁸; + = possible, - = impossible, ? = not sure.

	(1)	(2)	(3)	(4)	(5)	(6)
accustomed	+	?	+	+	+	?
addicted	+	-	?	-	+	?
beholden	+	+	?	?	+	+
broken	+	-	+	+	-	+
committed	+	+	+	+	+	+
dejected	+	+	+	?	-	?
destined	+	-	?	-	+	-
determined	+	+	+	+	-	+
devoted	+	+	+	+	+	+
distinguished	+	+	+	+	+	+
engaged	+	-	?	+	+	+
involved	+	+	+	+	+	+
known	+	+	+	+	+	+
noted	?	?	+	+	+	+
qualified	+	?	+	+	-	+
relieved	+	+	+	+	-	+
supposed	-	-	+	-	-	+
surprised	+	+	+	+	+	-
worried	+	+	+	+	+	-

All the past participles examined above behave more or less adjectivally. Let me make a few comments on the past participles in relation to the tests.

Most participles can occur before nouns, but some occur after them, particularly when the past participles are followed by phrases to complete the meaning of the past participles:

- a. children addicted to television
- b. a ship destined for America
- c. our son engaged to a nice young woman

Accustomed, addicted, dejected and destined have their corresponding verbs; i.e. accustom, addict, deject and destine respectively. But their uses as active transitive verbs are very infrequent in present-day English, and their predicative positions have been completely established.

As regards beholden, it has its corresponding verb behold, but the meaning of beholden 'having to feel grateful or under obligation' has moved away from the meaning of the verb, and in this respect this past participle can be said to have acquired its adjective lexicalization.

Premodification by 'very' is not so diagnostic a test, because even 'pure' adjectives sometimes do not

take the modifier as in

- a. *very infinite
- b. *very dead
- c. *very square

Incidentally, the same is true of comparative 'more' and superlative 'most'. In other words, modifiability by 'very' depends on the meaning of words (they are mostly gradable words). But not all adjectives are gradable, and this is true of the past participles. Broken, engaged and supposed are not gradable because of their meaning, and therefore are not modified by 'very'.

Un-prefixation is applicable quite freely to the past participles, but a few reject the prefix possibly because of their semantic contents (cf. Zimmer (1964: 39)). It seems that un-prefixation is not so diagnostic.

Degrees of active-passive correspondence are reflected in frequency. Some verbs appear more frequently in the passive forms than in the active forms. In my data, the following verbs often appeared in the passive forms: involve, interest, know, concern, suppose, relieve and surprise. The frequent appearance of some verbs in the past participle forms deserve consideration in the inclusion of the past participles as adjectives in dictionaries.

One remarkable tendency in dictionaries is that pedagogical dictionaries for non-native speakers of English include more past participles as separate items than those dictionaries for native speakers of English. The Concise Oxford Dictionary (Seventh Edition), for example, lists only the following past participles: beholden, committed, concerned, determined, devoted, distinguished and engaged. The tests show that these past participles are now full adjectives.

4. Conclusion

We started off with an examination of the criteria for distinguishing adjectival past participles from verbal past participles, and then applied the criterion tests to the 20 past participles to see whether they are adequate enough to reveal the differences between adjectival and verbal past participles. From the observations made before, the following points would seem relevant:

(1) The difference in the treatment of past participles in dictionaries is greater between pedagogical vs. non-pedagogical dictionaries than between British vs. American dictionaries. That is, pedagogical dictionaries include more past participles as separate items than non-pedagogical ones.

(2) When it is assumed that there is some active-

passive correspondence, the degree of correspondence will become an important factor in the (non-)inclusion of past participles in dictionaries. That is, a past participle will not have to be listed as a separate item, if the correspondence makes it possible to predict the form through the active-passive transformation. This is applicable in many cases. But even when the prediction is possible, delighted, excited and surprised, for instance, are often listed as adjectives in dictionaries. This is presumably because these past participles are more frequently used as predicative adjectives, often taking prepositions other than 'by'.

(3) Those past participles which cannot be predicted through the transformation will be better listed in dictionaries, particularly those dictionaries for non-native speakers of English. These past participles eventually have independent meaning and are placed before nouns, grammatically functioning as full adjectives. We must, however, take care to perceive whether the pre-position of a past participle is made possible as a result of its becoming a full adjective, or a temporarily formed adjective under the pressure of context.

(4) Those past participles that have acquired adjective lexicalization are listed as separate items. All the points made above can be considered as symptoms of the lexicalization. The lexicalization can be confirmed both semantically and grammatically. Those past participles which have undergone semantic shift, moving away from the central meanings of their corresponding verbs have come to have independent meaning, which is often realised as modifiability by 'very', premodification of nouns, or taking prepositions other than 'by'.

It must be emphasised that the factors that enable past participles to become adjectives are interrelated, not operating independently, and that there is a gradation in adjectivation, which often permits dictionaries to treat past participles differently.

A discussion of the treatment of past participles inevitably leads to the relation of grammar to lexicon, which unfortunately cannot be gone into deeply for the moment. The former describes regular and fully productive matters, while the latter describes irregular and semi-productive matters (cf. Gleason (1975)). The dictionary because of its nature makes more statements about lexicon than about grammar. The balance between these two domains, however, differs from dictionary to dictionary. One task imposed upon dictionaries is how to harmonize these kinds of information. The treatment of past participles is a

case in point where both grammatical and lexical matters are complicatedly involved. In discussing some problems of past participles, I have paid special attention to the integration of the properties of respective domains, at the same time hoping that my paper will initiate further discussion on past participles.

Notes

1. I should like to thank Professor Yoshihiko Ikegami for making detailed comments on an earlier draft of this paper, and for Mr Colin Sloley and Dr Sheila Hones for acting as informants.
2. See the table in section 2.
3. Compare the following example:
Labov considers spontaneous speech to be the best basis for linguistic theory because it is unconstrained by what the speaker thinks the researcher wants

J. Lyons et al. 1987. New Horizons in Linguistics 2. Penguin Books. P. 297.

For further discussion, see Siegel (1973).

4. Interestingly, these two items were not listed in the older version of the Longman Dictionary of Contemporary English. The inclusion of more past participles gives the impression that the new version has been more inclined for pedagogical purposes.
5. Teyssier (1968: 237) contrasts an involved style (= an elaborate style) with the issues involved (= the problem in question), explaining that the former meaning is 'permanent', and the latter is 'descriptive'.
6. Quirk and Greenbaum (1973: 6.34) say that these prepositions introduce 'stimulus' or 'quasi-agents'.
7. The results produced here were obtained both from the attestation of the forms in the dictionaries and from the informant tests. When the dictionaries and informants disagreed, '?' was written down in the table.
8. In column 6, 'possible', 'impossible' and 'not sure' can be considered as 'strong', 'weak' and 'moderate'.

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DEFINITENESS, DIRECT OBJECTS, AND WORD ORDER
IN HIXKARYANA (OVS)

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Hixkaryana is a Carib language spoken in northern Brazil, and is of the typologically rare word order Object-Verb-Subject. The language has been described by Desmond Derbyshire in numerous publications (1965, 1976, 1977a, 1977b, 1979, 1985); it is upon his extensive description that my study of Hixkaryana rests.

In this paper I begin to probe the structuring of Hixkaryana discourse with regards to the identification of participants. I have found this to be entwined with a number of things: sentential word order, the demands of RHEME-initial sentences¹, morphology, and larger-than-sentence clumps of discourse which Derbyshire has dubbed "sentence clusters". I will present here but a small segment of morphology, and attempt to explain its workings. It is but a tip of an iceberg in what seems to be a very elaborate, intricate, precise marking of the discourse status of participants. The examination of this bit of morphology will lead to a suggestion as to the manner in which the language treats Direct Objects with regards to their discourse status. Considerations of Hixkaryana's OVS word order will be apparent throughout.

There is no morphological marking of definiteness and indefiniteness on nouns in the language, according to Derbyshire (1985:6). Information structuring enabling the identification of discourse participants is necessary, and must be expressed somehow. Derbyshire gives no concerted attention to this question, though he provides useful clues, especially in the form of comments on discourse context. It might also be noted that in the English glosses given by Derbyshire, it is extremely rare to find a noun that is not introduced in the English by the definite article. This is to say that the glosses reflect a situation in which nouns in the English, whether Subject (hereafter "S") or Direct Object (hereafter "O"), are almost entirely definite. It is curious that the indefinite article is so rare in the glosses, particularly with regards to O's, since the language is syntactically O-initial.

Givon (1984:422) has noted that by cross-linguistic text frequency counts, S's are "overwhelmingly definite in discourse" and Patients (O's) are "overwhelmingly referential in discourse, but may be definite or indefinite". He writes: "This ... suggests that the only position where predictability is low, and where high indeterminacy may arise as a result of lack of explicit marking is that of the patient/accusative object." It will be claimed here that, in Hixkaryana, first, nominal O's are "prototypically" definite; and, second, that Givon's "high indeterminacy" only arises when sentences are taken out of their communicative context for

3) a. toto y- ahosiye kamara
man 3rd Subject/3rd Object, with preceding O-grabbed jaguar
'The jaguar grabbed the man'

b. toto y- ahosiye
man 3rd Subject/3rd Object, with preceding O-grabbed
'It (jaguar) grabbed the man'

c. n- ahosiye kamara
3rd Subject/3rd Object, without preceding 0-grabbed jaguar
'The jaguar grabbed him'

It is to be noted, both from the examples in (3), and from Table 1, that there is formal attention paid by the language as to whether or not a pre-verbal nominal is the O or not: the prefix for "third person S/third person O" is dual in form, with y- occurring following an (expressed) O, and with ni- occurring "elsewhere". Since either S or O may be elided, and since an S may occur sentence-initially for emphasis, Derbyshire (1985:32) claims that there is "potential ambiguity as to whether the NP is subject or object". This "potential ambiguity", he says, "is usually avoided" by the choice of y- or ni-. The "potentially ambiguous" situation to which Derbyshire here refers concerns the case in which the identification of the S and the O are obvious from the discourse context, and both nominals are elided, as in (3d):

d. n-
3rd Subject/3rd Object, without preceding Object- aho:siye
(x) - grabbed - (x) grabbed
'It grabbed him' or 'He grabbed it'

It may be suggested that (3d) is ambiguous only in isolation from the discourse which occasioned it; hence the "potential ambiguity" which, Derbyshire suggests, it is the purpose of this dual prefix to solve is dissipated by discourse context.

Derbyshire (1985:152) describes the discourse status of elided S's and O's as follows:

such an elision is always "known" or "given" information in that it relates to either first

or second person referents, which are clearly shared information on the part of the speaker and addressee, or third person referents, which are usually recoverable from the discourse context, but may be shared information on other grounds, in the sense that it is "activated" in the consciousness of the addressee ...

Thus, information that is GIVEN is obligatorily elided. "First and second person referents" are elided because such reference is "shared information" between two interlocutors. "Third person referents" are not necessarily "shared information" and thus are expressed nominally when they are not thought to have GIVEN discourse status; if they are of GIVEN status, they too are obligatorily elided.

Derbyshire does not differentiate in his discussion between the nominal expression or elision of the S and that of the O. There is an important distinction to be made here, however. The choice between the dual form of this prefix is determined not by the discourse status of the S, but by that of the O. That is to say, the language is more sensitive to the KNOWN/UNKNOWN status of the O than it is to that of the S. (Remember, the language is syntactically O-initial.) This is consistently the case; it is only with third person objects that this sensitivity is morphologically reflected in the choice between two prefixes. With first and second person O's, such KNOWN/UNKNOWN status is obvious from "nonlinguistic" commonsense context, as noted by Derbyshire (1985:152), quoted above.

My interpretation of the function of these two prefixes is not the only one; Alexander (1988) has given a structural explanation in terms of "path containment" conditions, and concludes that "A verb agrees with the closest nominal" (8). His point is to escape the problems portmanteau agreement poses for his syntactic theory (1, 9). The explanation provided here is of a different sort, and is more on the track of trying to understand the discourse motivation in Hixkaryana for this bit of morphology.

Further support for my interpretation comes from another set of prefixes in the language, which Derbyshire terms "nominal", and which mark the person of the possessor. There is overlap in form between the nominal and verbal prefixes, which Derbyshire (1979:98) states simply as an observation on occurrences:

it can be seen that there is exact correspondence between the possessives and the group of verb prefixes which mark the direct object occurring when the subject is third person, except for III, where the basic allomorph in the noun prefix is i- and that in the verb is ni- ...

It is proposed here that this overlap is not accidental, and that it reflects the encoding of a similar discourse semantics, regardless of "noun" or "verb".

As has been said, the "verbal" prefix y- occurs when there is an overtly expressed third person nominal preceding the verb, and it is to be interpreted as an O of NEW discourse status. There is also a "nominal" third person prefix y- (with phonologically conditioned allomorph Ø-), which occurs only when the immediately preceding constituent is a nominal, and in fact the person possessing:

- 4) waraka y- owa- ni
 Waraka 3rd-person chest possessed-item
 'Waraka's chest'

(1985:200)

- 5) waraka Ø- kanawa- ri
 Waraka 3rd-person canoe possessed-item
 'Waraka's canoe'

(1985:200)

If there is no preceding nominal in a possessive construction, the prefix is i- (c.f. verbal ni-) (stem-initial allomorph e-):

- 6) e- wa- ni
 3rd-person chest possessed-item
 'his chest'

(1985:200)

- 7) i- kanawa- ri
 3rd-person canoe possessed-item
 'his canoe'

(1985:200)

Table 2 summarizes the situation concerning the form, occurrence, and syntactic function of what Derbyshire and Alexander recognize as four distinct prefixes. Semantically, there is coherence in the overlapping obvious in Table 2. In the case of "nominal" i- (as in [6] and [7]) and "verbal" ni- (as in [3c] and [3d]), the possessor and the O (respectively) are inferrable from the discourse context (they are KNOWN and identifiable), and have thus been elided. However, in the case of both "nominal" y- (as in [4] and [5]) and "verbal" y- (as in [3a] and [3b]), the possessor and O (respectively) are UNKNOWN and require nominal expression.

Thus, these prefixes constitute part of the manner in which Hixkaryana expresses grammatical definiteness/indefiniteness, and the semantics of GIVEN-NEW discourse status. There is formal attention paid by the language to whether or not the preceding nominal constituent is KNOWN (and therefore elided, and occurring only in the verbal/nominal prefix) or UNKNOWN (and therefore requiring nominal expression, as well as the prefixal element). In the case of noun-like stems, this attention coincides with the person of the possessor, and in the case of verb-like stems, it coincides with the O.

	FORM	SYNTACTIC FUNCTION	OCCURRENCE
VERBAL	y-	-marks 3rd person S, 3rd person O	-with preceding O
NOMINAL	y-	-marks 3rd person possessor	-with preceding nominal
VERBAL	ni-	-marks 3rd person S, 3rd person O	-without preceding O
NOMINAL	i-	-marks 3rd person possessor	-without preceding nominal

Table 2: Prefixes

It is part of the aim of this paper to give some suggestions as to the nature of O's in Hixkaryana with regards to discourse structuring. Thus far two kinds of O's have been mentioned: 1) the case in which the O has been elided under conditions of recoverability; the definite, SPECIFIC and KNOWN discourse status of the O is coded in the verbal prefix ni-. This kind of O will be called SPECIFIC GIVEN with regards to its discourse status. The second kind of O that has been mentioned is that case in which the O receives nominal expression and occurs pre-verbally; the verbal prefix y- indicates the sentential presence of an O that is definite, SPECIFIC, hitherto UNKNOWN, but now named. This kind of O will be called SPECIFIC NEW. These two kinds of O's (SPECIFIC GIVEN and SPECIFIC NEW) are by far the most common in the language, and involve situations such as those I have discussed with regards to the prefixes.

There is a third kind of O which occurs, but it is very rare. It also involves the very rare occasions in Derbyshire's data in which the O occurs post-verbally. (The examples here will constitute all of the clearly VO sentences in Derbyshire's corpus that I have found!) Consider the following:

- 8) texhtxe kana heno
let's-go-bring-it fish QUANT
'Let's go bring some fish'

(1977a:594)

- 9) awanaworo ipatxowi tehtxe kana heno
tomorrow let's-go let's-fetch-them fish QUANT
'Tomorrow let's go and fetch the fish'

(1979:78)

- 10) isna taryatxow hami katxhonano
to-there we(INCL)-take-it DEDUCT goods
'We must take the goods there, evidently'

(1985:76)

Note that in (8), (9), and (10), the 0 is indefinite, NONSPECIFIC, or plural; the verbs are also all future exhortatory or unrealized as well. That the nature of the event may not be the relevant point, however, is ascertained from examples such as the next two; in these examples, the verbs are of a similar sort, but the 0's are in their "proper", usual, pre-verbal, sentence-initial position. If the nature of the event was influencing the placement of the 0, (11) and (12) might reflect this by having the 0 occur post-verbally as it did in (8), (9), and (10).

- 11) kanawa xenyko
canoe see-it
'Look at the canoe'

(1979:17)

- 12) kyakwe wohra tesnye
toucan not-shooting let-us-two-be
'Let's not shoot the toucan'

(1979:19)

As has been mentioned, there is a shortage of data exemplifying post-verbal 0's; this merely adds support to the suggestion being here given.

This, then, is the third, rare, kind of 0 with regards to discourse status; it is one which is NEW (since it receives nominal expression), but NONSPECIFIC. In the final two examples, one can see how the attention to the specificity and nonspecificity of a NEW 0 interacts with word order:

- 13) kurahatho hnankaye waywa heno komo
bow he-laid-it-down arrow QUANT COLL
'He laid down the bow and set of arrows'

(1977a:594)

- 14) hakrya wotxowni ha , koso heno komo
peccary they-shot-it INTENSFR , deer QUANT COLL
'They shot peccary and some deer'

(1979:78)

The coordination involved in the 0's of (13) and (14) could have been expressed by a paratactic sequence, but instead the more definite/SPECIFIC part of the 0 is sentence-initial, and the indefinite/NONSPECIFIC part of the 0 is post-verbal. This third kind of 0 will be called NONSPECIFIC NEW.

On the basis of the kinds of data presented here, it is suggested that 0's in Hixkaryana are "prototypically" definite or specific in reference (SPECIFIC NEW or SPECIFIC GIVEN); in these cases the 0 occurs pre-verbally or is elided. On the rare

occasion when it is indefinite or nonspecific (NONSPECIFIC NEW), the 0 occurs post-verbally.

Hixkaryana has been claimed to be syntactically OVS in its sentential word order (Derbyshire 1977a, 1977b, 1979, 1985), and psychologically-semantically RHEME-initial in its sentences (Cummings 1989:76-120). It is significant and curious that in such a language, 0's are prototypically definite in reference. An understanding of this linguistic configuration and an explanation for its possibility involve consideration of larger-than-sentence sections of discourse. This is beyond the scope of this paper, and will be forthcoming.

ENDNOTES

1. The interpretation of "RHEME" meant here is rather akin to that evident in Danes (1974); more specifically it is that employed in Davis (1984, 1985). A detailed study of RHEME in Hixkaryana may be found in Cummings (1989:76-120).

2. For an in-depth discussion, see Cummings (1989).

3. All examples are taken from Derbyshire's publications; each example carries its own reference.

4. Extensive phonological conditioning in the language is pervasive (see Derbyshire 1985:188-190 for a full discussion). Examples (1), (3c), (3d), (5), and (6) reflect allomorphic forms of those under discussion. (Lack of extensive morphemic transcription in the data available to me restricts my choice of examples to those of this type.)

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INFLECTIONAL MORPHOLOGY IN THE LEXICON

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0. Introduction

There has been a continuing disagreement as to which component of a grammar should account for inflectional morphology. On the one hand, some linguists have proposed to deal with it in the syntactic component (Anderson, 1982; Aronoff, 1976; Jackendoff, 1974) since it is referred to by syntactic rules. Others, on the other hand, have proposed to treat both inflected and derived words in the lexicon by virtue of the fact that similar processes of word-formation are also found in inflection and since the basic linguistic unit of analysis in both cases is the word (Starosta, 1988; Di Sciullo and Williams, 1987; Selkirk, 1982; Lieber, 1981). For ease of reference, we will call the former position the 'transformational' view and the latter, the 'lexical' view.

This paper supports the lexical view of locating inflectional morphology in the lexicon. Following Lieber's (1981) and Selkirk's (1982) arguments, three morphological considerations will be discussed as follows to show the problems or inadequacies encountered in the transformational account:

(a) Inflected stems must be available in the lexicon to account for derived and compound forms that also manifest them;

(b) Affix allomorphs usually associated with inflectional paradigms may act as trigger for certain related word-formation; and

(c) The same formal processes such as affixation, reduplication, and vowel length which are independently needed for inflection are also needed for derivation.

To illustrate the above points, I will use data from Tagalog, one of the major languages of the Philippines.¹ Then, the lexical approach will be presented as part of a framework in which the lexicon includes rules that account for inflected as well as derived forms. The formalisms adopted here in stating the lexical rules are those proposed in the lexibase framework (Starosta, 1971a, 1971b, 1988; De Guzman, 1978), and as statements of lexical generalizations, these rules capture not only the internal structure of words but also the various relationships that exist between and among sets of lexical entries. From the description of the approach, the advantages that derive from it will become clear.

1. The Transformational View

In his article "Where's Morphology?" (Anderson, 1982), Anderson proposes that inflectional morphology, being relevant to syntax, should be integrated with syntax, and that derivational morphology, being opaque to syntax, can be confined in the lexicon. Two significant pieces of evidence he presents to show the relevance of inflection to syntax have to do with: (i) certain properties of words that are based on syntactic structures, and (ii) a morphological material which has an independent syntactic function being incorporated in a word with a different grammatical function.

For the first evidence, Anderson refers to those properties of words such as case, gender, number or person which may be assigned configurationally according to the Government and Binding framework. For example, case is assigned to a nominal by its governing category. Thus, the category Verb, for instance, which is said to govern its object assigns to this sister NP category the accusative case. Likewise, he claims that agreement properties are assigned to modifiers by the Head of the construction in which these modifiers appear. For example, an Adjective within a NP will take agreement features from its head Noun say in terms of gender, number and case, e.g. Spanish *las lindas manitas* 'the pretty hands' in which both Determiner *las* and Adjective *lindas* are supposed to have derived both feminine and plural features from the noun head *manitas* which is marked for these inflectional features.

The second evidence alluded to comes from data in Breton. Anderson's analysis of Breton pronominals (Anderson, 1982:575-584) concludes that subject pronouns in this language move into the position of verbal agreement obligatorily. This morphological process of incorporating subject pronouns into the verb, he argues, is similar to that obtaining in the "creation" of the "conjugated preposition" forms, i.e. pronominal objects of prepositions. In both cases, the pronominal material, presumed to be inflectional in the verb and in the preposition, "has an independent function in the syntax, and which is in fact generated by the rules of the base outside of the word in which it ultimately appears" (p. 580). Moreover, he points out that what is involved in the verbal morphology is not a simple case of cliticization of the subject pronoun, as others may argue, because the pronominal forms are tightly bound to the tense marking.

These two pieces of evidence are convincing counter-examples to the premise of the strong Lexicalist Hypothesis (Chomsky, 1970) which is interpreted as "Syntactic rules cannot make reference to any aspects of word-internal structure" (Anderson, 1982: 573). However, a number of studies on morphology in this decade have started to weaken this strong boundary set up between the syntactic component and the lexicon (Lieber, 1981, Bresnan, 1982, Selkirk, 1982), even to the extreme point of accounting for all syntactic dependencies in the lexicon (Starosta, 1988). The assumption that has been developing lately as a result of empirical

evidence from inflecting languages is to place both inflectional and derivational morphology in the lexicon. This is also the position of what is labelled here as the lexical view. Besides showing some reasons for rejecting the Transformational view, we must also present a consequent account of the counter-examples cited above without loss of generality and adequacy.

2. Rejecting the Transformational Approach

In this section, we will discuss three morphological considerations that the Transformational approach has to deal with if it insists on the complete separation of inflectional and derivational morphology. The first notable observation in Anderson's model is that inflected forms, being developed in terms of morphosyntactic representations on S-structure, are not accessible in the lexicon either for derivation or for compounding. In Tagalog, as in other genetically unrelated languages such as English, German, Polish, Finnish and Dutch and presumably others, there are derived and compound words that involve inflected forms as constituents. But before we present examples, let us first look at Tagalog verb inflection briefly.

The standard analysis of Tagalog verbs identifies two features, namely, voice or focus and aspect (Bloomfield, 1917; Schachter and Otnes, 1972) which characterize the category.² For voice, there are at least five possible types, namely (i) subjective (subj)³, (ii) objective (obj), (iii) locative (loc), (iv) benefactive (ben), and (v) instrumental (ins). Each voice-marked form of the infinitive takes three conjugated forms for aspect: (a) contemplated (future), [+contp], (b) completed (past or perfective), [+comp], and (c) non-completed (progressive), [-comp]. The following examples will serve to distinguish some of the marked voice-forms in the infinitive, [-fin], of the roots bilih 'buy' and lutu? 'cook':

I.	A. Root = bilih	B. Root = lutu?	Pag+stem = pag+lutu?
	Pang+stem = pang+bilih		Pang+stem = pang+lutu?
(i)	subj b- <u>um</u> -ilih		<u>m</u> -pag+lutu? = maglutu?
(ii)	obj bilih- <u>in</u>	lutu?- <u>in</u>	
(iii)	loc bilih- <u>an</u>		pag+lutu?- <u>an</u>
(iv)	ben i-bilih		i-pag+lutu?
(v)	ins i-bilih/i-pang+bilih		i-pang+lutu?

Each of the above infinitive forms marked for voice feature, with a root or a stem as base, has its own system of inflection for aspect. For purposes of economy of space, we will compare only the first two voices with a root and a stem base.

II.	Root as base	Pag+stem as base
(i.a) subj	b-um-ilíh [-fin]	mag-lútu? [-fin]
	bi:-bíllíh [+contp]	mag-lu:-lútu? [+contp]
	b-um-i:-bíllíh [-comp]	nag-lu:-lútu? [-comp]
	b-um-ilíh [+comp]	nag-lútu? [+comp]
(ii.a) obj	billíh-ín [-fin]	lutú?-ín [-fin]
	bi:-billíh-ín [+contp]	lu:-lutú?-ín [+contp]
	b-in-i:-bíllíh [-comp]	l-in-u:-lútu? [-comp]
	b-in-ilíh [+comp]	l-in-útu? [+comp]

From the above forms, it will be noted that with a Root as base the two infixes marking completed aspect are -um- and -in-, indicating at the same time that these forms belong to the UM infinitive, subjective voice, and the IN infinitive, objective voice, respectively.⁴ Between these two markers of the completed aspect, -in- forms of verbs, especially those referring to food preparation or cooking, have been the source of lexically derived items such as the following:

(1) Derived Nouns from Verbs, [+comp]

sigang	s-in-igang	'to stew'	sinigang	'a stewed dish'
	[+comp]			
paksiw	p-in-aksiw	'to boil in vinegar	pinaksiw	'a dish cooked in
	[+comp]	broth'		vinegar broth'
tapa	t-in-apa	'to smoke fish	tinapa	'smoked fish'
	[+comp]	or meat'		
pirito	p-in-irito	'to fry'	pinirito	'a fried dish'
	[+comp]			

In this set of examples, the process of nominalization is by conversion. The completed aspect form of the verb of a given semantic subclass in the objective voice marked by -in can derive Nouns (names of dishes prepared in the manner dictated by the meaning of the verb) without any change in form.

In terms of compounding, we also observe some forms involving voice-inflected forms of the verb as constituents, with the resulting compounds functioning as adjectivals. For example:

(2) Compound words with voice-marked verbs

- | | | | |
|----|---------------------|-------------------|---|
| a. | <u>l-um</u> -ubug | <u>l-um</u> -itaw | 'lit.: to sink and to appear; |
| | [+V, +subj] | [+V, +subj] | bobbing in and out of water' |
| b. | <u>datn-an</u> ('t) | <u>panaw-an</u> | 'lit.: to arrive and to fade/disappear; |
| | [+V, +obj] | [+V, +obj] | to come and go (on someone); |
| | | | unmoved' |

- | | | | |
|----|-----------------|------------------|-----------------------------|
| c. | <u>i</u> -tulak | kabig- <u>in</u> | 'lit.: to push and to pull; |
| | [+V, +obj] | [+V, +obj] | choices being equal' |

The above illustrations confirm the necessity of making inflected forms accessible in the lexicon as input to various types of word-formation.

The second consideration pertains to the occurrence of affix allomorphs, usually associated with inflectional paradigms, that act as trigger for certain related word-formations. This phenomenon is clearly manifested in the following Tagalog gerundive nominals:

(3) Gerundive Nouns

- | | | | | |
|-----|---------------|--------------|--------------|--------------|
| (a) | t-um-akbuh | 'to run' | pag+takbuh | 'running' |
| | um-iyak | 'to cry' | pag+iyak | 'crying' |
| | k-um-ain | 'to eat' | pag+kain | 'eating' |
| (b) | m-(p)ag+lutu? | 'to cook' | pag+lu+lutu? | 'cooking' |
| | m-(p)ag+labah | 'to launder' | pag+la+labah | 'laundering' |
| | m-(p)ag+tago? | 'to hide' | pag+ta+tago? | 'hiding' |

Note that the set of verbs exemplified in (a) takes the -um subjective voice affix and the corresponding gerundive form is made up of the nominalizing affix pag- plus the verb root. In the second group of subjective voice verbs, the affix is the allomorph m- whose base is a pag- stem.⁵ Correspondingly, the gerundive forms of these verbs are formed differently from the preceding set. Besides taking the usual nominalizing prefix pag-, the form also requires the process of reduplicating the first CV of the root. Actually, what is reduplicated is the first CV of the verb stem minus the prefix pag- in that stem, if it occurs. For example, the following causative verbs with the pag+pa+ stem will show nominalization similar to the processes involved in (b):

- | | | |
|-----|---------------------------------|---|
| (c) | m-(p)ag+pa+takbuh | pag+pa+patakbul |
| | 'to cause s.o. to run | 'the act of causing s.o. to run' |
| | m-(p)ag+pa+labah | pag+pa+palabah |
| | 'to cause s.o. to launder s.t.' | 'the act of causing s.o. to launder s.t.' |

With stative verbs that usually take the subjective voice affix ma-, the process of gerundive nominalization is still different as the following examples will show:

- | | | |
|-----|----------------|-----------------------------|
| (d) | ma-sunug | pag+ka+sunug |
| | 'to be burned' | 'the state of being burned' |
| | ma-matay | pag+ka+matay |
| | 'to be dead' | 'the state of being dead' |

All three classes of verbs that differ according to their voice affixes and corresponding base forms evidently have their respective ways of forming their gerundives. If we grant that voice inflection is done in the syntax, there is no way by which the voice-marked stems may be related to their gerundive forms. Of course, the obvious alternative account of the Transformation view for these gerundives would be to say that the roots or stems listed in the lexicon which serve as input to derivation are the same elements inserted in the preterminal nodes of the phrase marker which are subjected to inflection. The drawback in this option though is that in view of the many possibilities a given stem may be derived into, the semantic as well as the formal relationship between the two sets of forms cannot be captured.

An even more convincing evidence for an inflected form of the verb being inextricably linked to a corresponding derived form can be found in verbs denoting a habitual action, a sport, or occupation. The corresponding Noun form that refers to the person who does the activity identified by the Verb makes use of the full subjective voice form with a reduplication of the second CV and lengthening of the first vowel. For example, below are infinitive subjective voice forms marked by m- plus a pang-stem and their corresponding derived nominal forms:

(4) Occupational Nouns derived from full forms of Verbs

- | | | | |
|-------|-------------------------------|-----------------------|--|
| (i) | baril 'gun; rifle' | | |
| | m(p)ang+baril] _V | 'to hunt' | |
| | [mamari] | >--> | [ma:mamari] 'hunter' |
| (ii) | kalakal 'merchandise' | | |
| | m(p)ang+kalakal] _V | 'to sell merchandise' | |
| | [mangalakal] | >--> | [ma:ngangalakal] 'trader; businessman' |
| (iii) | isda? 'fish' | | |
| | m(p)ang+isda?] _V | 'to fish' | |
| | [mangisda?] | >--> | [ma:ngingisda?] 'fisherman' |

Finally, the third consideration has to do with stating generalizations about the processes shared by both inflection and derivation and ultimately generalizations about word structure. Certainly, we can state the general patterns of word-formation arising from the various processes employed, thereby providing the canonical patterns of derived and compound forms. But to make a similar set of morphological generalizations about the inflected forms in the syntactic component becomes costly and, unfortunately, results in the loss of generalization about word-forms and their relationships.

If we refer back to the examples of inflected verbs given above, the processes that apply are (i) affixation, (ii) reduplication, and (iii) vowel length. The voice affixes may be a prefix, (m-, i-, um-, ma-), an infix (-um-), or a suffix (-in-, -an-). In their aspectual forms, the verbs manifest reduplication of the first CV of the root or stem with an accompanying vowel

lengthening in the reduplicated syllable. (See the [+contp] and the [-comp] forms above, p. 4.) From the derived items cited above, the same three processes are observed in the various noun formations. Other types of lexical derivation that employ these processes abound in Tagalog. Some are given below :

(5) Affixation

(a) Prefix <u>taga-</u> + Verb stem 'one who takes charge of doing V'		
sulat	s-um-ulat	taga+sulat 'one who takes care of writing'
	'to write'	
labah	m-(p)ag+labah	taga+pag+labah 'one who does the laundry'
	'to do laundry'	
palutu?	m(p)ag+palutu?	taga+pagpalutu? 'one who is in charge of causing s.o. to cook'
	'to cause s.o. to cook'	

Note that the verb stem to which taga- is prefixed has to be the same stem which is used for the subjective voice.

(b) Suffix -an attached to Verb stem (plus length on the first vowel) 'place for doing V'

laru?	'play'	la:ru?+an	'playground'
dasal	'pray'	da:sal+an	'place for praying'
upu?	'sit'	u:pu?+an	'bench, chair'
higa?	'lie down'	hi:ga?+an	'bed; cot'

One other process observed in inflected forms which is a consequence of suffixation is stress shift. Going back to those items that take -in or -an, we find that the penultimate stress on the root or stem shifts to the following syllable after suffixation. (See examples under (II. (ii.a), p. 4) To compare this process with an identical one in derivation, observe the following examples:

(6) Derivation with affixation and consequent stress shift

araw	'sun; day'	araw+an	'daily basis'
d-um-alaraw	'to visit'	dalaw+an	'to visit each other'

(7) Derivation by conversion with stress shift

(a) Verb to Adj

b-um-asag	'to break/crack'	basag	'broken/cracked'
p-um-utul	'to cut, split'	putul	'cut/ split'
lutu?-in/mag+lutu?	'to cook'	lutu?	'cooked'

(b) Noun to Adj			
págod	'fatigue'	pagód	'tired; exhausted'
gútom	'hunger'	gutóm	'hungry'
hílo	'nausea'	hiló	'dizzy'

In the above illustrations, we find that various morphological processes apply to words, whether inflected or derived. The units involved in the operation of the processes are roots, stems and words. By placing inflectional and derivational morphology under the same component, we can state the generalizations on the common morphological processes once and thus eliminate redundancies.

One additional and , perhaps, stronger support for the notion that inflected forms are available in the lexicon comes from neurolinguistic studies. One study conducted by Fromkin (1987) involving dyslexic patients shows that lexical and grammatical morphemes (words) are listed in separate sub-lexicons. With stimulus words of each type, the responses corresponded to the given type. For instance, the response elicited by the stimulus 'eye' was 'eyes', 'arrival' for 'arrive', 'she' for 'his', and 'those' for 'in' (Fromkin, 1987: 10). From these data, a further implication that can be deduced is that both inflected and derived forms occur independently even outside of syntactic context.

Another study has to do with agrammatic aphasics (de Bleser and Bayer, 1988) whose performance in various experimental tasks demonstrates "a surprisingly good command over inflected forms in addition to other aspects of morphology in the face of a relatively impoverished syntax" (p. 45). Moreover, in yet another psycholinguistic investigation by Stemmer and MacWhinney (1988), the answer they arrived at to the question "Are Inflected Forms Stored in the Lexicon?" was affirmative for high-frequency regularly inflected forms as well as for irregular forms.

Given the morphological considerations discussed and the support drawn from some empirical studies, there is strong justification for incorporating inflectional morphology in the lexicon. Following is a broad outline of a lexical approach that does this.

2. The Lexical View

As in Lieber (1981), Selkirk (1982), Di Sciullo and Williams (1987) and Starosta (1988), the lexical view adopted here favours an organization of the Lexicon component that consists of (i) a list of the words (and idiomatic expressions) that exist in the language and (ii) the lexical rules that account for both inflected as well as derived (including compound) forms. These works referred to, however, differ in their respective proposals concerning the morphological rules. In this paper the formalisms used in stating the lexical rules are mostly those proposed in the lexicase framework (Starosta, 1971a, 1971b, 1988; De Guzman, 1978), some of

them being reminiscent of certain rules found in Chomsky's standard theory (Chomsky, 1965).

In view of the limitations on this paper, we can only provide a broad outline of the second subcomponent focussing on those aspects of inflection and derivation discussed above. In the lexibase framework four kinds of rules are used to state lexical generalizations. They are (i) subcategorization rules (SRs), (ii) redundancy rules (RRs), (iii) derivation rules (DRs) and (iv) morphological rules (MRs). As the name implies, SRs identify the subcategories in a given lexical category. These rules may refer either to inflectional or lexical features. For example, Tagalog verbs are characterized by the following SRs, among others:

- (8) SR - 1: [+V] → [± subj]
 SR - 2: [-subj] → [± obj]

The first rule states that the category verbs may either be marked for the subjective or non-subjective voice; the next rule identifies the binary division of the non-subjective class into an objective or non-objective subclass, and so on. Along with this voice feature, verbs are also subcategorized for aspect, thus, the following type of rules:

- (9) SR - 5: [+V] → [± fin]
 SR - 6: [+fin] → [± contp]

SR-5 states that verbs are either finite or infinitive, and by SR-6, finite verbs are either contemplated or non-contemplated, and so on. Each lexical verb stem then is expanded into a paradigm of inflected forms, each with its characteristic features. At the same time, verbs are also subcategorized on the basis of a different relevant feature. For example, [+V] → [± [+Agt]] shows a subcategorization based on a contextual feature, i.e. a verb is either cooccurring with an agent actant or not.

A lexical SR, on the other hand, may take the following form:

- (10) SR - 8: [+V] → [± state]

This rule means that verbs are either stative or non-stative. Such features may function in constraining the application of certain other lexical rules or they may trigger certain morphological, syntactic or semantic consequences statable in other RRs.

A RR is an implicational type of rule which states that items marked for a particular feature will predictably be marked for another feature which may be contextual or non-contextual. For example, the syntactic connection between an inflected verb and its cooccurring constituents can be stated as follows:

- MR -2: $\begin{bmatrix} +N \\ +abs \end{bmatrix}$ $\rightarrow$ [pag + [~~pag~~ + C₁V₁, C₁V₁...]]
'the act of V-ing' [+V, +subj, +M]

An MR that accounts for an inflected form marked [+contp], contemplated, for example, will necessitate the specification of its voice subclass features. Thus,

$$(15) \text{ MR - 10: } \left[\begin{array}{l} +V \\ +\text{subj} \\ +\text{UM} \end{array} \right] \rightarrow /C_1 V_1 : + C_1 V_1 \dots / [+contp]$$

The rule means that a verb form in the subjective voice marked for UM reduplicates the stem's first CV and lengthens the V of the reduplicated syllable to form the contemplated member of the paradigm. A comparison of the MRs, both for derivation and inflection, will reveal the general principles governing the morphological structure in the language.

Irregular forms will be entered as individual lexical items, each one being specified for the feature involved. This indicates that unpredictable forms which cannot be generalized in the rules are actually learned as whole units with their corresponding features fully specified.

All these rules capture significant generalizations pertaining to lexical categories or subcategories. As they apply to each individual lexical entry, the corresponding lexical item or items become fully specified qualifying them ready for lexical insertion. In sum, the lexicon has the following components:

A. Lexical entries:

- (i) Phonological representations
- (ii) Lexical category features
- (iii) Argument features
- (iv) Semantic features
- (v) Other idiosyncratic features

B. Lexical Rules:

- (i) Subcategorization Rules
- (ii) Redundancy Rules
- (iii) Derivation Rules
- (iv) Morphological Rules

In this account, the primary characteristic is heavy reliance on features to state generalizations about syntactic and lexical relations. It claims that these features are basic properties of words which constitute a major part of the linguistic knowledge of the native speaker. The problem of interaction between inflected and derived forms noted in the Transformational view does not exist here because both types of items are accessible for further derivation even as derived items are subject to inflection.

The evidence provided by Anderson from Breton regarding pronominal incorporation in the verb (or in the preposition) may be accounted for by an SR and an RR as follows:

(16) SR - x: [+V] $\rightarrow$ [$\pm$ NOM, + Pro]

(17) RR - y: $\left[\begin{array}{c} +V \\ +\text{NOM}, + \text{Pro} \end{array} \right] \rightarrow [- [+ \text{NOM}, + \text{Agt}]]$

SR - x means that verbs are either marked for expressing a nominative pronominal or not; if positively marked, then by RR - y, this verb is redundantly specified as not being able to cooccur with an agentive element in the nominative. (This excludes either nouns or pronouns as stated by some other RR.) The marking of the pronominal as an inflectional feature of the verb would be similar to that of marking prepositions. Hence, both verbs and prepositions that take a pronominal feature will have a corresponding paradigm expressing the various membership. Since the pronominal form is intertwined with tense and the root, each form is unpredictable and has to be entered as an individual lexical item.

As for the argument about some inflectional features being assigned configurationally, it may be countered that this requirement is bound to the GB framework used to describe the grammar. In the lexibase framework, features such as case, number, gender, etc. are introduced via SRs. Any inherent features are specified in each lexical entry.

4. Conclusion

In light of the arguments for and against the Transformational view of accounting for inflectional morphology, this paper demonstrates that the more justifiable account is the Lexical view. It is able not only to provide a reasonable means of explaining the Breton pronominal facts within the proposed approach, i.e. as inflectional features with consequent syntactic constraints, but also make a unified account of both derived and inflected word 'formation'. Given the lexical rules, a number of features of lexical items - syntactic, morphological, semantic, phonological - are generalized. What remains to be assessed are the competing proposals concerning the formulation of the morphological or lexical rules stated in the lexicon.

NOTES

¹Lieber (1981) refers to some Tagalog data from Carrier (1979) whose analysis of the verb structure is different from that adopted here (De Guzman, 1978). Between the two analyses, however, there is agreement on the need to specify at least some of the voice markers for each lexical item.

²In earlier literature on Philippine languages, the feature voice used here has been called focus.

³For some Philippine linguists, subjective voice/focus is identified as agentive or actor. The reason for adopting subjective is in order to include non-actor or non-agent subjects of intransitive verbs, i.e. the subject of unaccusative verbs in Relational Grammar terms. For example, 'The leaves fell.'

⁴Others identify these infixes as portmanteau affixes. However, the infix -in- can also mark the completed form of other voice-marked verbs.

⁵The analysis of the subjective voice affix m-, instead of the more traditional mag- or mang-, as an allomorph of um- is introduced in De Guzman 1978. It may be mentioned that the pag- or pang- stems also serve as bases to other voice inflected forms.

⁶SRs pertaining to argument structures are lacking here. For details, see De Guzman, 1978 and Starosta, 1988.

⁷An MR may take the form of a morphophonemic rule depending on the morphological process that expresses a given feature.

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SPLITTING HOMONYMS

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The Egyptian hieroglyph most frequently used for writing the single consonant *m* is an owl (Sign List G17, Gardiner 1957.469). When one sees an owl, drawn or carved, plain or painted, peering at one from a hieroglyphic or hieratic text, one is seeing a bilabial stop, represented by a feathered, clawed, lipless, beaked bird. One presumes, given the acrophonic principle which apparently operated in the development of the script (cf. Lefebvre 1955.13), that the pre-Egyptian word for 'owl' began with an *m*-. Earlier words for 'owl' in Egyptian are not known, but Demotic has *ḥ-m-w-l-ḡ* and Coptic B *moulač*, S° *moulačh*. It is usually assumed that the (-)*m*- of these is from the unknown earlier word on which the hieroglyph *m* is based (Černý 1976.82). The *ḥ*- of Demotic is unexplained. The Arabic word for 'owl' is *bu:m*, and this supports the idea that the proto-base began with *b*- (cf. also Lat. *hūbō*, etc.)

Our concern here is not with the Egyptian word for 'owl', which we do not know, but with a series of words having rather disparate meanings but which can be written using this bird - often with the single hieroglyph OWL (G17). The preposition *m* 'in, from' is usually written with the owl and has been discussed elsewhere (e.g., Hodge 1983b.43-44, 1986b.149 [IE]). It may be traced to the proto-base **b-w* 'leg, foot'. Other *m*-words are 1. 'who?' 2. 'don't!' 3. 'see!' 4. 'come!' 5. 'take!' and 'give!'. All but 'who?' are imperatives.

Judicious utilization of comparative and historical linguistics allows us to shed some light on these frequently homographic lexemes. On the comparative side we can use related forms in other Lislakh (LL) languages to assist in identifying the proto-bases and affixes involved. On the historical side we can use the Egyptian and Coptic spellings to better advantage than previously.

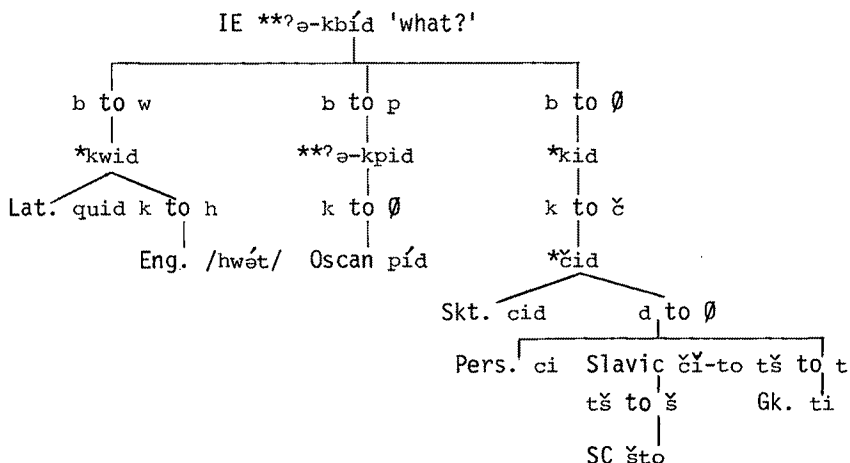
1. Eg. *m* 'who?, what?' has long been recognized as having easily identifiable relatives elsewhere in Afroasiatic (e.g., Vycichl 1958.376). An updated list of such forms is: Eg. *m* 'who?, what?' (Erman-Grapow 1957.2.4, Faulkner 1962.100). Co. *nīm* 'who?' is from **-n m* (Till 1961a.102). Sem. **man* 'who?', **ma:* 'what?' (Moscati et al. 1964.114). Ber(ber) **ma:* 'what?', **mi:* 'who?, what?' (Prasse 1972.216, 239). Ch(adic) **mi/*mə* 'what?' (Newman 1977:34; cf. **wa* 'who?'). Om(otic) **amb* 'how (many)' (Bender p.c.). Cu(shitic) **mA-* 'what?, which?' (Dolgopolsky 1973.178-79). **m-* (indefinite 3p pronoun), S(outh) C(ushitic) **ʔumu* (indefinite 3p pronoun)

(Ehret 1987.99). Support for including Om. ****amb** 'how (many)?' may be found in the semantic range of Semitic ***ma:**. See, for example, the various usages of Heb. *māh* in the lexicons. The Cushitic meaning 'indefinite third person pronoun' is suggestive. South Cushitic, in addition to ***ʔumu**/***ʔimi** (indefinite 3p pronoun) also has ***mā** 'people' (Ehret 1987.99). In Semitic, Geez *mannu* is 'who?', but *mannu-hi* with the negative means '(not) anyone, (no) one' (Lambdin 1978.128). The meaning of the proto-base must be reconstructed to be such that the various extant semantic values may reasonably be derived from it.

Om. ****amb** gives us a further, formal, clue: we are not dealing with a simple **m** but with one derived from ****mb**. Among the consonant ablaut patterns which have been established for LL we have ****b** - ****bH** - ****Nb**, represented most frequently on the extant level as **b** (IE and occasionally elsewhere, **w**), **bʔ** or **bh** and **m/mb** (Hodge 1988a).

The plain **b** is found in Eg. *b-w n-b* 'everyone'. It also occurs in the Hausa prefix *ba-*, as in *bāhausēē* 'a Hausa'. The Egyptian has been connected with *b-w* 'place' (Gardiner 1957.79; see also Hodge 1987b.99), which is derived from the aforementioned LL ****b-w** 'leg, foot'.

Indo-European is conspicuously absent from the above discussion. While the analysis needs much more study, it is possible that the above 'interrogative **b**' is found in the base ****k-b**, which lies behind so many question words and relative pronouns in IE. The traditional reconstruction of this segment is ***kw-** (e.g., ***kwō-**/***kwi-**, Watkins 1985.34). Deriving it from ****k-b** makes much better phonologic sense, as the following suggested developments demonstrate:



All of these are 'natural' changes. Oscan *píd*, with the stop **p**, shows that a labial stop is to be reconstructed for proto-IE (as is also the case for 'two': ****a-b** yields Lat. dial.

dwis, regular bis, Gk. dis 'twice', with parallel b to w, loss of d, loss of b). The $\check{x}$ [tš] to t shift is attested in Egyptian: *k-n > Eg. -č-n > Co. -tn /-tən/ 'you (pl.)' (Vycichl 1983.217).

2. Our next m is the negative imperative: m or ?-m 'don't!' (Erman-Grapow 1957.2.3.3, Faulkner 1962.100). In certain constructions Egyptian does not negate the verb; it uses a negative verb (Gardiner 1957.262). From the use of these verbs and of other AAs negatives, it is clear that what we are dealing with is not the negating of a positive but the positing of a negative.

The negative verb ?-m-? occurs in the imperative and the optative. There has been considerable discussion of its syntax (see Gardiner 1957.260, Edel 1964.573-81, Allen 1984.105-8), but we are here concerned with its form and with putting this form into the broader LL context.

The Coptic negative imperative has both a stressed and an unstressed form: mpōr /ʔəmpó:r/ and mpr- /ʔəmpər-/. These are taken to be from an earlier ?-m ?-r-?(-t) 'don't do (so-and-so)!' (Late Egyptian, Černý-Groll 1978.360; Coptic, Vycichl 1983.118). There is also a significant Fayumic form mpe1 /ʔəmpé1/ (Till 1961b.52). Mpōr shows that the -p- reflects a proto labial stop (here **b) and so is an integral part of the chronomorph. It also supports our claims elsewhere that many of the p's and b's of mpl/mpr and mbl/mb- clusters reflect a proto labial stop (IE examples, Hodge 1986b).

The spelling of the Egyptian negative imperative is usually m, but there are also writings with m plus the core writing ARMS IN GESTURE OF NEGATION (D35) (Edel 1964.580). The negative optative often has prothetic alif (implying **ʔə-mC-), while the negative imperative does not (see Allen 1984.105). We assume that the m or ?-m is only a partial rendering of the consonantism.

Parallels to the negative imperative/optative are found, for example, in Chadic. Pero (a West Chadic language) has a 'prohibitive', a construction which 'is used only as the negative counterpart to the imperative and the optative'. The negative imperative employs a circumfix kát... -m; the optative adds mú... kát... -m (Frajzyngier 1989.90-92; see 210-12 for other negatives of verbal constructions). Hausa has kadà for both: kadà kà zoo 'don't come!', kadà mù tàfi 'let's not go!'. (Compare the affirmatives: kà zoo 'come!', mù tàfi 'let's go!'.) The final -m of Pero is clearly the same chronomorph as the Egyptian negative m. In Pero the -m occurs in forming negative sentences both nominal and verbal (209-11). In Hausa, apart from kadà, the negative forms all have b.

The LL setting of imperative **mb- is that of negative **b-(C) generally. We find both **b- and **b-1. One of these is likely derived from the other, but the direction of the derivation is not certain. Some forms are:

**b-(C). Eg. b (negative). Postulated by Clère (1956). LEg. b-w (negative) (Černý-Groll 1978.204). Berber *h-b-h 'not to have' (Prasse 3.186). Chadic *bə(j) (negative)

(Illič-Svityč 1966.15). Ha. baà 'there is not'. (See examples of -bəy, -bu, -ba, -bi, -bai, -wa, etc. in various Chadic languages under No. 336 'there is not' in Kraft 1981.) Cu. *bA[ɟ]- 'not' (Dolgopolsky 1973.39). *ba- 'not to have' (Ehret 1987.14). IE *eu- 'lacking, empty' (Pokorny 1959.345, Watkins 1985.18, Mid. Pers. awē- 'without'; see Hodge 1986b.148).

**bH-(C). Chadic: Pero bʔe/bʔa 'not' (Frajzyngier 1985.78). Omotic *bʔA (Bender p.c.). IE *bhe 'without' (Pokorny 1959.112, Pers. bi- 'without').

**Nb-(C). Eg. m (negative imperative). Sem. *ma: 'not' (Ar. ma:, Heb. māh, the latter curiously listed under māh 'what?' in the lexicons). Ber. *ma: 'not' (Prasse 1972.1.247; note modal meaning reported for one dialect). Cu. E(ast) C(ushitic) *ma(?) (negative particle) (Sasse 1979.52). IE *mē '(that) not, lest' (Pokorny 1959.703).

Some examples of the longer form **b-1 are: Sem. *b-1 'not' (Aistleitner 1963.49). Ber. Tou. wəla 'there isn't' (Prasse 1972.1.245). **b-1H. Ber. Tou. ebrer 'to be worth nothing' (Foucauld 1951.1.46). **Nb-1. Eg. Co. Fmpel (negative imperative) (Till 1961b.52). Sem. Geez ʔenbala 'without, except for' (Lambdin 1978.384). Cu. Or. malee 'without' (Gragg 1982.275). **Nb-N1. LEg. m-n 'there isn't, not', Dem. m-n 'there isn't', Co. mmon 'not' (Vycichl 1983.112). Co. A(chmimic) mn /mən/ (negative imperative) (Till 1961b.52).

3. Eg. m 'behold!'. Edel takes this imperative to have reed-leaf as a second consonant (i.e., m-? in our transcription), though this is never written. We take it to be from **ʔə-NbyV-, this being from **ʔə-Nb1V- (cf. Hodge 1988c). This gives us an apparent base **b-1 'eye, see'. Some of the forms are:

**b-1. Eg. b-ʔ-ʔ 'eyeball' (Ward 1978.141). LEg. b-nr-w (= b-1-w) 'eye(s)', Dem. b-1 'eye', Co. bal 'eye' (Vycichl 1983.27). Ber. Ghadamès *well 'eye' (from b- according to Vycichl 1983.27). Cu. Afar -bal/-b1- 'see' (exx. Bliese 1976). IE *wel- 'see' (Pokorny 1959.1136, Watkins 1985.75).

Some forms from **Nb-1 are: Eg. m-ʔ-ʔ 'see' (Gardiner 1957.207-8). Ber. Tou. amel 'to show' (Foucauld 1952.3.1188). Ch. *m-1 'to show' (Jungraithmayr-Shimizu 1981.227). Cu. *mA11A-ʔ- 'to look at' (Dolgopolsky 1973.180). IE **mel- in Gk. meletáo 'think about'. In Semitic, Akk. ʔamaru 'see' is from **Nb-1H. (Heb. ʔamar 'say' is from a different semantic line of development.)

Interestingly the **b-N1 and **b-1H forms of this base are reflected in the Egyptian word b-n-b-n-t, variant b-r-b-r-t 'pyramidion'. Edel says the b-n-b-n-t is 'perhaps for *b1b1t' (1955.96tr), citing b-r-b-r-t. He is correct in connecting 1 - r - n, though the consonant ablaut relationship of this familiar alternation was then unknown. The finest surviving capstone, that of Amenemhet III, has on it a brief inscription, indicating the seeing of the 'beauty of Re', as the tip of the pyramid was the first of anything or anyone in the area to see the rising sun (cf. Breasted 1935.57).

Dem. b-1 and Co. blle /bəʔle/ 'blind man' have been compared with Co. bal 'eye' (Vycichl 1983.27). The -1 is in common and is from a base **1-C 'eye, see', but the b- of bal is from **b-w 'foot, leg' and so 'place', i.e., **b-w + 1-C 'place of seeing' = 'eye', while the b- of blle is from negative **b-C + 1-C, i.e., 'not seeing' = 'blind'. Compare Cu. *bwA11- 'blind' (Dolgopolsky 1973.195).

4. M and m-LEGS WALKING (D54) are writings for the imperative 'come!'. M-ʔ occurs in Middle Egyptian (Gardiner 1957.258), and Edel transcribes OEg as if the reed-leaf were there (1955.289-90). Co. amou 'come!' (Vycichl 1983.9) shows prothetic alif so that something like **ʔə-NbCV- must be reconstructed. Related forms support the basic **b.

**b-C. Eg. n-b-n-b 'come' (Greek Period, Erman-Grapow 1957.2.245). Sem. *b-ʔ 'enter' (Aistleitner 1963.45). Ch. *buw- 'come' (Skinner 1977.16). Cu. *bAh- 'go in' (Dolgopolsky 1973.318), with -h suffix.

**bH-C. Ch. Gaʔand bʔa- 'come'.

**Nb-C. Eg. m-ʔ, Dem. ʔ-m, Co. amou 'come!' (Vycichl 1983.2). Ch. *mb- 'go, come' (Jungraithmayr-Shimizu 1981.118, 119). Cu. *ʔim(t)- 'come' (Ehret 1987.107).

There are also forms which suggest a base **b-1: **b-1H. WCh. *H-b-r 'enter' (Stolbova 1987.55). **Nb-1. Eg. m-ʔ-ʔ 'come' (New Kingdom on, Erman-Grapow 1957.2.23). **Nb-N1. Ch. *m-n 'come' (Jungraithmayr-Shimizu 1981.74). In IE Lat. veniō 'come' is probably from the **b-N1 form of this base.

5. M 'give!' (also read ʔ-m-ʔ) and m 'take!' (also read ʔ-m) are here both taken to be short forms of the proto base **b-1 'carry'. As with other bases, we can trace divergent semantic developments. From a broad sense of moving an object by hand (i.e., carrying it), we get the more specialized 'take' ('carry from') and 'give' ('carry to'). Such differences are usually associated with affixes indicating the hither-ness, thither-ness, the purpose, et sim. We can observe their use in daughter languages such as Hausa, where dʔaukaa means 'to take away' but dʔaukoo is 'to bring', i.e., 'to take hold of and carry hither'. We therefore consider the attribution of both m 'give' and m 'take' to a common base reasonable.

While the two could be homographs, they could also be distinguished in the spelling if the scribe so wished. Note the spellings in Edel (op. cit.), where HAND WITH OFFERING (D37) is common usage in 'give' and WALKING LEGS (D54) for 'take', though there is some confusion by Middle Egyptian times.

Among the Coptic spellings we have SAL ma, B moi and F° mai (Vycichl 1983.103). These call for ʔ as a final consonant, this being lost in ma but surviving as -y in moi and mai. There are several possibilities for the earlier vocalization. We note that the Coptic has no prothetic alif. We may reconstruct one which is later lost: LL **ʔə-Nb-1, Eg. **ʔə-mbāʔ, where mb becomes m (with ʔə- no longer necessary) and ʔ goes to ʔ, which is then lost, or to y.

Or we may presume that *mb* had already simplified to *m* in Old Egyptian and that we had simply ***ma3*. The latter would not explain the occasional Old Egyptian writing of prothetic *alif*. If both of our reconstructions existed dialectically, we could explain ?- from the first and the Coptic from the second.

An example of metathesis with this base is found in ?-3-m 'to offer' (Faulkner 1962.9), which is from ***?-m-3*. This is formally paralleled by the word ?-m-3 (name of a tree), which becomes ?-3-m (Faulkner 1962.20, Gardiner 1957.478, Edel 1955.60). There is also Eg. *m-3-s* 'to offer' (Faulkner 1962.102; the affix *-s* is known elsewhere), and we have in these two verbs derivatives of ***Nb-1*.

'Take!' is also written *m-n* in *m-n n-k* 'take to yourself'. This has been interpreted as *m* 'take!' and *n* 'to', with the latter curiously doubled (see Edel 1955.297, Gardiner 1957.258). It is more likely that it is *m-n* 'take!' from **Nb-N1*.

Some forms of the ***b-1* 'carry' base follow, illustrating both formal and semantic developments.

***b-1*. Eg. *n-b-3* 'carrying-pole' (Faulkner 1962.130). Sem. **(w/y-)b-1* 'bring, lead' (Aistleitner 1963.122). Ch. Bade *bàlú* 'give' (Schuh 1977.162). Cu. Or. *baal-ca* 'hand over (smthg)' (Gragg 1982.27). IE **wel-k-* 'pull' (Pokorny 1959.1145), to which should be added some of the items under **wel-* 'to tear' (1144).

***b-1H*. Sem. Ug. *b-?-r* 'bring' (Fensham 1980.45). Ber. Tou. *abbar* 'seizing with whole hand' (Prasse 1974.2.42). Ch. **barə* 'give' (Newman 1977.27). IE **wer-* 'find, take' (Pokorny 1959.1160).

***b-N1*. Ch. Mwulyen *úvàn* 'give' (Kraft 1981.3.60). Cu. Bilin *ben* 'distribute' (Illič-Svityč 1966.18).

***b-C*. Eg. *t-b-y* 'to pay' (Faulkner 1962.292). Ch. WCh. **ba* 'get' Schuh 1977.160). Cu. pSam **bih-i* 'take out' (Heine 1978.91), Afar *bee* 'take away' (Parker-Hayward 1985.70).

***bH-C*. IE Hitt. *pāi-* 'give' (treating the *p* as radical), Lydian *bi-* 'give' (Gusmani 1964.78).

***bH-1*. Eg. *f-3-?* 'to lift, present' (Faulkner 1962.97).

***bH-1H*. IE **bher-* 'carry' (Pokorny 1959.128, Watkins 1985.7).

***bH-N1*. Eg. *f-n-f-n-w* 'recompense (?)' (Faulkner 1962.98).

***Nb-1*. Eg. *?-3-m* 'to offer', *m-3-s* 'to present' (Faulkner 1962.9, 203). Sem. Ar. *hamala* 'carry'. ***Nb-1H*. Eg. *m-r-?* 'sounding pole' (Faulkner 1962.112). Ch. **mari* 'give' (Jungraithmayr-Shimizu 1981.116). IE **mər-* 'hand' (Pokorny 1959.740). ***Nb-N1*. Eg. *m-n* 'take' (Faulkner 1962.106). Sem. **y-m-n* 'right-hand'. IE **mən-* 'hand' (/ **mər-*, Pokorny 1959.740).

***Nb-C*. Eg. *?-m* 'give! take!'. Om. **im* 'give' (Fleming 1976.318). Cu. Afar *miise* 'to offer' (Parker-Hayward 1985.168). IE **em-/mē-* 'take' (Pokorny 1959.310).

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Due to a standardization of references in the present series of articles on LL, one may have a 1986b without a 1986a, aut sim.

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OWL after

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THE CASE OF LATIN AND GREEK ABSOLUTE CONSTRUCTIONS

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Introduction

In this paper I shall attempt to account for changes which took place in the cases used to mark Latin and Greek absolute constructions, working in the framework of Government-Binding theory. (I shall not deal with accusatives absolute, although they must also be analyzed in a complete description of this phenomenon.) It should be noted that we are discussing written languages, and languages which may not have been the native languages of the writers; our conclusions should thus be viewed with caution. The case used for the absolute construction is the ablative in Latin, and the genitive in Greek. However, in later Greek and Latin, the nominative could be used instead of these cases. This is part of an apparent trend in several Indo-European languages, as described by Jespersen (1934:128) in (1):

(1) "... various languages began to use the nominative case as more conformable to the rôle as subject. This is the rule now in Modern Greek, and goes far back, (...) e.g. in the apocryphal Evang. Thomae 10.1 Met' oligas hēmeras *skhizōn tis xula* ... epesen he axine. ... an early mediaeval Latin example [is]: Peregrinatio Silviae 16.7 *benedicens nos episcopus* profecti sumus."

Jespersen goes on to give examples of nominatives absolute in other languages such as Spanish and Italian. Mandilaras (1973:370), quoted in (2), speaks of the use of the nominative absolute in Greek and traces it back to an earlier point than Jespersen, namely to the Classical period:

(2) "Replacement of the genitive absolute by the accusative is attested in the papyri (no example from the N.T.). (...) Still more often papyri employ the nominative absolute. This construction goes back to Classical Greek, where Xenophon especially seems to favor it."

Examples of nominatives absolute are given in (3) (Latin) and (4) (Greek).

(3) mater ... negata [= CL *necata*] soror ipsius in monasterio ... transmittur '(his) mother having been killed, his sister is sent to the convent' (Gregory of Tours H.F. 5:35, quoted in Serbat (1975:188))

(4)a. Βονιφάτιος δὲ τὴν ἀρχὴν τῆς ἐσπερίου Λιβύης λαβὼν,

φθονήσας Ἀέτιος διαβολὴν ποιεῖται κατ' αὐτοῦ ...

'Boniface having received the command of Western Libya, Aëtius out of jealousy slanderously accused him...' (Constantine Porphyrogenitus, *De Adminstrando Imperio*, 25:7-9)

b. καταντήσας (sc. ἐγὼ) οὖν πρὸς τὸν γεωργὸν ... εἶπε

'(I) therefore having met the husbandman ... he said'

(Ägyptische Urkunden aus den Staatlichen Museen zu Berlin, Griechische Urkunden 1873, 7-9, quoted in Mandilaras (1973:370))

Before discussing this change, I shall first briefly give a synchronic account of the constructions in the Classical languages. This account is essentially the same as that presented in Libert (1989).

Complementizing Case

The Classical absolute constructions are apparently unusual for two reasons (although the sense of strangeness may be lost to those who have long familiarity with Greek and Latin): 1) the subjects of clauses are not in the usual subject case, the nominative; as Serbat (1975:186) says "Il est à première vue surprenant qu'une «proposition» comporte un «sujet» à l'ablatif"; 2) the ablative and genitive cases are used to indicate a certain kind of subordinate clause, not a typical use of case. In fact, the use of case to indicate subordination is not all that unusual. I illustrate this by means of the Australian language Kayardild (of the Tangkic group of languages). Kayardild is like some of the more highly inflected Indo-European languages in that it has a fairly large inventory of cases, including the nominative, genitive, allative, and oblique. It differs from these languages in allowing nouns to bear more than one case ending at a time, assuming a wide definition of *case*, which allows for some unusual types of case. The type of case we shall discuss is *complementizing case*. This type of case is used to mark some types of finite subordinate clauses. (Dench and Evans (1988) give examples of complementizing case in various other Australian languages.) Complementizing case occurs in Kayardild "when the pivot NP is not subject of both clauses" (Evans 1985:61), i.e. the main and subordinate clauses (pivot being "the topic of a complex construction" (Evans 1985:55)), or "when the subordinate clause is an argument of the main predicator" (Evans 1985:73). In (5a) and (5b) we see complementizing case marking under the first and second conditions respectively. One will observe that complementizing case is marked on all the words of the clause, not only the nouns.

- (5)a. jina-a bijarrb [dangka-ntha raa-jarra-nth]
 where-NOM dugong(NOM) man-COBL spear-PST-COBL
 'Where is the dugong, (which) the man speared?' (Evans 1985:61)

- b. ngada murnmudawa-th, [ngijin-inja thabuju-ntha thaa-thuu-nth]
 I:NOM rejoice-ACT my-COBL older br.-COBL return-FUT-COBL
 'I am glad that my big brother is coming back' (Evans 1985:73)
 (COBL= complementizing oblique case)

Kayardild has two complementizing cases, the oblique and the locative. The former is used if the subject of the clause is third person or first person exclusive, while the latter is used with first person inclusive, as shown in (6a). When the subject is second person, the choice of case depends on whether the speaker wants to express some sort of solidarity with the listener; if so, then the complementizing locative (CLOC) is used; otherwise the oblique is chosen:

- (6)a. jina-a bijarrb [nga-ku-rr-a/nga-ku-l-da
 where-NOM dugong(NOM) 1-INC-DU-NOM/1-INC-PLU-NOM

kurulu-tharra-y] 'Where is the dugong, which you and I speared?'
 kill-PST-CLOC

- b. jina-a bijarrb [nyingka kurulu-tharra-y]
 where-NOM dugong(NOM) you:NOM kill-PST-CLOC

- c. jina-a bijarrb [ngumba-a kurulu-tharra-nth]
 " " you:COBL kill-PST-COBL

'Where is the dugong, which you killed?' (Evans 1985:424)

(There is a constraint prohibiting CLOC from being marked on pronoun subjects, which is why *you* in (6b) does not bear that case ending).

We have just seen one factor allowing multiple case marking in Kayardild. An example of a noun with the highest possible degree of piling up of case markers is contained in the sentence in (7):

- (7) maku-ntha yalawu-jarra-ntha yakuri-naa-ntha
 woman-COBL catch-PST-COBL fish-MABL-COBL

dangka-karra-nguni-naa-ntha mijil-nguni-naa-nth
 man-GEN-INSTR-MABL-COBL net-INSTR-MABL-COBL

'The woman must have caught fish with the man's net' (Evans 1985:448)

The word for 'man' bears a genitive affix to mark it as the possessor of the net, an instrumental marker to agree in case with the word for 'net', a modal ablative which agrees with the past tense of the verb, and a complementizing oblique case to indicate that the sentence in which it is contained is construed as a

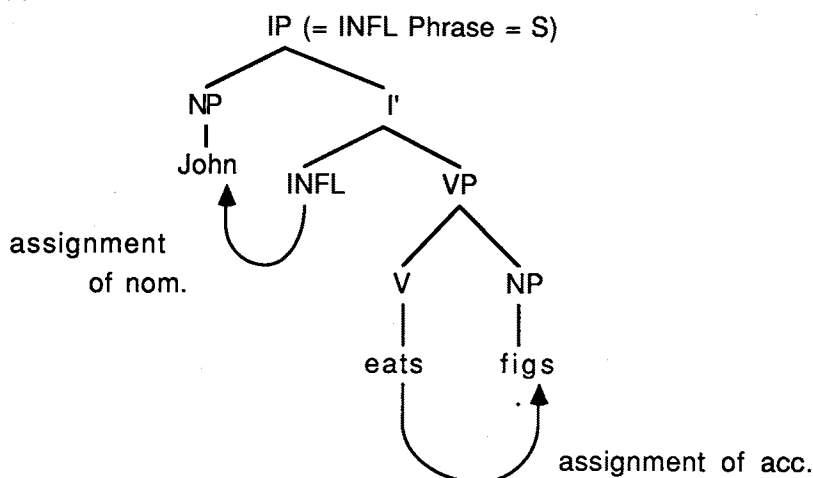
subordinate clause.

One may argue that complementizing cases are not really cases, but there are grounds for considering them to be such. First, the complementizing cases have the same form (allowing for phonological and morphological variation) as the corresponding "normal" (relational) cases, e.g. the locative marking location is the same phonetically as the complementizing locative. Second, complementizing cases are subject to the same morphological rules as other case markers. For example, there is a rule that when a locative marker (of any sort) is followed by an oblique marker (of any sort), the sequence -kurrka results. This is true whether a modal or complementizing oblique is involved.

Case Assignment

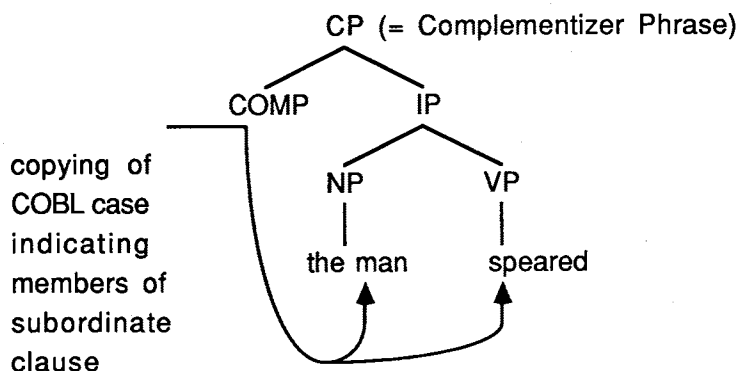
We shall now discuss how complementizing case is marked. According to GB theory, (certain) cases are assigned to a noun phrase by some constituent governing it. This sounds similar to traditional descriptions, but the difference lies in the fact that the case which is assigned is an abstract case, which may or may not show up as an overt case marker (depending on the language). Thus even in languages with little or no overt, morphological case, such as English and French, we would say that cases are assigned. In fact, there is a general constraint on syntactic representations, the *Case Filter*, which states that at a certain level all phonetically realized noun phrases must bear case. The case of the direct object is assigned by the verb, which would not be so foreign an idea to traditional linguists. What would be more striking is the statement that the case of the subject is assigned by the verbal inflection of the sentence (INFL), which in GB theory is a constituent of syntactic structure. In (8) is given a simplified syntactic representation (at one level) of a simple English sentence, showing the case assignment processes that I have just mentioned. The same general structure and processes would apply to Latin and other languages (leaving aside minor differences such as surface word order).

(8)



GB-theory has not yet developed a way of accounting for how complementizing cases are marked, probably because complementizing case does not occur in languages that have undergone close examination in the framework. In Libert (1988) complementizing case is seen as a type of agreement case, i.e. case which is marked on a constituent to show agreement with some other constituent. This is related to adjectival agreement in Greek and Latin, where an adjective must agree in case with a noun which it modifies. The mechanism by which the complementizing case appears on the relevant words is a kind of feature transmission or case copying from the complementizer constituent (which need not be overt) of the subordinate clause onto the elements of that clause. An illustration of this is given in (9), showing the complementizing case marking process which takes place in the subordinate clause of (5a). (Here, and in general in this section, many details have been left out.)

(9)

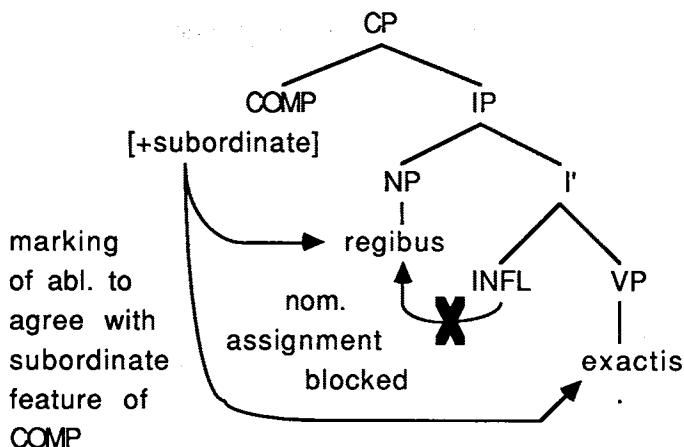


Latin and Greek

Now let us imagine that case in Latin and Greek works in somewhat the same way as in Kayardild, i.e. that they also have complementizing case. The ablative and genitive, when they are used in the ablative/genitive absolute, are complementizing cases, i.e. they are copied from the (null) complementizer position of the subordinate clause and perform the same function as the complementizing oblique and locative of Kayardild, namely they indicate a kind of subordinate clause and indicate its subject. (The absolute participle or adjective will then agree with its subject in case). This is somewhat different from Kayardild, because Kayardild has complementizing case on more than just the subject and the verb of the subordinate clause. Latin and Greek, unlike Kayardild, only allow one case marker per noun, even if the case markers are of different sorts (i.e. even a combination of one "typical" case and one complementizing case is forbidden). Thus we could account for why Latin and Greek objects and other non-subject nouns in ablative/genitive absolute constructions are not also in the ablative/genitive by saying that the ablative/genitive can not be marked on them, as they already bear some other case (e.g. accusative, dative). However one might also say that this should be true of the subject, which does have an ablative/genitive marker. How could it receive an ablative/genitive marker, when presumably it also has already received a case marker (namely nominative)?

It would perhaps be better to say that languages differ as to which constituents are marked for complementizing case, and that in Latin only the subject and the participle indicating the verbal action receive it. (V. Dench and Evans (1988) for other possibilities for complementizing case marking, e.g. only on the verb, on all non-subject constituents). The fact that Latin and Greek permit only one case marker per noun still comes into play, for it explains why the subject of absolute constructions does not also bear the nominative case typical of subjects -- given the fact that it has (or will receive) ablative complementizing case, assignment of nominative case would cause it to have two cases. An illustration of how case marking in an ablative absolute would apply is given in (10).

(10)



I am assuming that there is an INFL position in such clauses and that it can assign case to the subject; I believe that this may be necessary for absolute constructions, but it might be contested.

In our discussion of the restrictions on the number of cases which may be borne by nouns we have been glossing over the question of whether this restriction applies to abstract or morphological cases. Clearly, in Latin there can not be more than one morphological case marker per noun, but does this mean that there can be only one abstract case per noun as well? In other words, could Latin nouns bear more than one abstract case (and thus have both e.g. a nominative and a complementizing ablative case) but be restricted in the number of abstract cases that may show up phonetically? I believe that this is in fact the correct analysis, because we do not expect nouns bearing only complementizing case to be able to pass the Case Filter. If this is so, then the diagram in (10) is not accurate: it is not that assignment of nominative case to the subject of an ablative absolute is blocked; rather, (abstract) nominative case is assigned, and so is present at a syntactic level, but may not coexist with the complementizing ablative at the surface phonetic level. The ablative "wins out" over the nominative in the competition for the single permissible overt case slot.

Nominatives Absolute

To repeat the crucial points of the the analysis of the Greek and Latin absolute constructions: The ablative/genitive case, a complementizing case, is marked on the subjects of absolute constructions, to indicate that they are part of the subordinate construction rather than of the main clause. The subjects can not bear the typical case of subjects, the nominative, since they would then bear two overt cases, which is not permissible in Latin and Greek. Thus the nominative marking must be sacrificed, in the interest of making clear which clause the subjects of absolute constructions are subjects of.

If the inclination to mark all subjects (whether of main or absolute clauses) with the nominative, the general subject case, were stronger than the inclination to indicate which clause a subject belonged to, then subjects of absolute constructions would bear a nominative case (thereby losing the ability to bear ablative/genitive marking), and thus be uniform with other subjects, at the risk of possible confusion over which clause they belonged to. (Such confusion might rarely occur in practice because of the ordering of constituents). Putting this in terms of the framework we have been using, (overt) agreement in COMP is not indicated so that the case assigned by INFL can be realized.

This is, I claim, what happens in later Latin and Greek when nominatives absolute appear. Complementizing case is no longer marked, but is replaced by "normal" case marking in those environments where it formerly occurred. However, the nominative absolute did not completely replace the ablative/genitive absolute, e.g. Gregory of Tours uses both constructions. Thus in fact there was in later Greek and Latin a choice between the complementizing case and "normal" case, but one had to make a choice, unlike in *Kayardild*, where both types of case could appear on a noun.

Conclusion

The fact that both later Latin and Greek showed a tendency to use a nominative absolute instead of an ablative/genitive absolute is more than a coincidence, which one might claim if the ablative/genitive were replaced e.g. by the dative. A replacement of one oblique case by another would not be evidence for the dropping of complementizing case, but the fact that the subjects of absolute constructions have their cases replaced by the normal subject case shows that a fundamental shift in case marking type was taking place. The role of COMP in case marking was diminishing. As in some modern languages, the duty of ensuring that the subject of the absolute construction was not interpreted as the subject of the main clause was left to mechanisms other than case marking.

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THE BULGARIAN DEFINITE ARTICLE:
AN INFLECTED CLITIC AND ANTICLITIC*

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0. Introduction. In a 1976 article, the Slavicist Mark Elson concluded that 'non-native scholars have been incorrect in the classification of the definite article in Bulgarian...as an enclitic' (Elson 1976:276). While he also concluded, quite convincingly, that it is not a suffix either, he never explicitly stated any positive conclusion as to what it really is.¹ This paper aims to examine the relevant data in the light of the model of clitics originally presented in Lockwood 1987. It will be concluded that the Bulgarian article is indeed an enclitic in most, but not all, of its occurrences, despite the fact that it is an inflected word, and that its behavior, as Elson also pointed out, is different from that of some other enclitics in the language. Furthermore, it will be proposed that in those instances where this definite article is not a clitic because it takes the accent and causes a lack of accent in the preceding word, it is what will be termed an "anticlitic".

1. Syntactic Evidence for the Clitic Status of the Article. One of the most obvious demonstrations that the Bulgarian article is an enclitic rather than a suffix can be seen in the phrases presented in Table 1. In the terms of Lockwood 1987, this material shows that the Bulgarian definite article satisfies the criterion of SYNTACTIC SEPARABILITY: we find the phonologically bound /-ta/, /-to/ in a syntactically statable position--after the first noun-phrase constituent--rather than on some particular word the way a true suffix would be. This first constituent may be the noun (ex. 1b, 1b), a modifying adjectives (ex. 1d, 2d), or a numeral (ex. 1f, 2f, 1h, 2h). It would be extremely awkward to try to account for the occurrence of these elements as suffixes, but the notion of second-position syntax--a phenomenon found for accented words as well as clitics in various languages--makes it easy to treat.

2. Apparent Counterexamples.

2.1 Inflection. Elson's conclusions about the non-enclitic status of the article, however, were caused by several other facts which seem to show that it has a different behavior from other enclitics. The easiest of these to dismiss is the fact that it is an inflected word, showing gender and number agreement with the head of the noun phrase. While it is doubtless true that clitics are most often uninflected particles like conjunctions or adpositions, there are---in Bulgarian itself---clear examples of inflected words such as verbs which are clitics at least some of the time.²

Table I. *CLITIC DEFINITE ARTICLES IN THE BULGARIAN NOUN PHRASE.*³

1a. kníga	A BOOK	2a. polé	A FIELD
1b. knígata	THE BOOK	2b. poléto	THE FIELD
1c. stára kníga	AN OLD BOOK	2c. stáro polé	AN OLD FIELD
1d. stárata kníga	THE OLD BOOK	2d. stárotó polé	THE OLD FIELD
1e. edná kníga	ONE BOOK	2e. ednó polé	ONE FIELD
1f. ednáta kníga	THE ONE BOOK	2f. ednótó polé	THE ONE FIELD
1g. edná stára kníga	ONE OLD BOOK	2g. ednó stáro polé	ONE OLD FIELD
1h. ednáta stára kníga	THE ONE OLD BOOK	2h. ednótó stáro polé	THE ONE OLD FIELD

2.2 Morphophonemic Behavior. A more interesting point to which Elson devotes considerable attention involves the way the Bulgarian definite article is linked to preceding accented words. Overall, this linkage is shown to be more like that of a true suffix for the article, but different for various other enclitics usually recognized as such in the grammars of the language. These other enclitics tend to condition alternations in the preceding accented word similar to what would be found in a suffixless form. The data in Table II presents some examples. The first line of each entry given is the morphonic (morphophonemic) shape of the stem, the second in the gloss. Then the next line gives the form in isolation, involving in examples 4-6 the final voiceless realizations of morphonically voiced obstruents found in most Slavic languages. In the next line, we see the undisputed suffix /ove/ with the various roots, and we observe that here the voiced/voiceless distinction is maintained. The last two lines of the entry show the stems in combination with the masculine singular article and the clitic verb form /e/ IS. Before the article, we see the same maintenance of the voiced/voiceless distinction as before the suffix, whereas before the /e/ we see the suspension of contrast characteristic of word-final position. This demonstrates essentially that the article is more like a true suffix in its morpho-

Table II. *BULGARIAN NOUNS WITH SUFFIXES AND CLITICS*

	(1) MN /kúp/	(2) MN /líst/	(3) MN /znák/
	PILE	PAGE	SIGN
SINGULAR	kúp	líst	znák
PLURAL	kúpove	lístove	znákove
THE	kúpə(t) ⁴	lístə(t)	znákə(t)
A ___ IS	kúp e	líst e	znák e
	(4) MN /xljáb/	(5) MN /grózd/	(6) MN /slóg/
	BREAD; LOAF	BUNCH OF GRAPES	BOUNDARY
SINGULAR	xljáp	gróst	slók
PLURAL	xljábove	grózdove	slógove
THE	xljábe(t)	grózdə(t)	slógə(t)
A ___ IS	xljáp e	gróst e	slók e

phonemic conditioning effects, because it allows the maintenance of the distinction between voiced and voiceless obstruents, whereas the verb form /e/ must be set off by some boundary which conditions the suspension of this contrast. This is one of the points made by Elson about the differences here.

A second point is illustrated by some parallel forms in Table III. Here the order of the phonemes /r/ and /ə/ is subject to alternation with the order /r/ + /ə/ occurring when the following consonant closes the syllable they occupy, and the order /ə/ + /r/ occurring when that same consonant begins the next syllable. Here again, the article behaves in the same manner as the true suffix, whereas the clitic /e/ conditions the pre-word-final realization.

Table III. *ADDITIONAL BULGARIAN NOUNS WITH SUFFIXES AND CLITICS*

	(1) MN /vɾx/	(2) MN /gɾm/	(3) MN /gɾb/
	TOP	THUNDER	BACK
SINGULAR	vɾx	grám	gráp
PLURAL	vérxove	gérmove	gérbove
THE _____	vérxə(t)	gérmə(t)	gərbə(t)
A _____ IS	vɾx e	grám e	gráp e

All of this data certainly shows that the definite article in various cases behave more like a true suffix as opposed to the other enclitics, as Elson claims. In conjunction with the model of Lockwood 1987, however, Elson's conclusion can still be disputed. That model allows for a distinction between CLOSE CLITICS, not separated from adjacent words by a boundary, and LOOSE CLITICS, for which a special boundary is required. Bulgarian turns out to be a good example of a language in which enclitics of both of these subtypes occur, with the article as a close enclitic, and the others which Elson discusses, such as /e/, as loose enclitics preceded by the boundary /<=/.

2.3 *Accentuation*. A final possible objection to the conclusion that the Bulgarian definite article is enclitic is based on the fact that, under certain circumstances, the article itself is accented rather than unaccented as a clitic is expected to be. The most widespread case of this is seen in examples like those presented in Table IV, which illustrate that the article can sometimes be accented. These show three possible accent patterns contrasting with the fixed stem accent seen in Tables II and III.

Table IV. *BULGARIAN NOUNS WITH ACCENTED MASCULINE SINGULAR ARTICLES*

	INDEFINITE SINGULAR	DEFINITE SINGULAR	INDEFINITE PLURAL	
1.	vɾák	vragé(t)	vragové	ENEMY
2.	úm	umé(t)	umové	MIND
3.	dól	dolé(t)	dolóve	RAVINE
4.	rók	rogé(t)	rogóve	HORN
5.	láf	lávə(t)	lávove	LION
6.	vír	viré(t)	vírove	POOL

Such examples raise not just the question of whether the Bulgarian article is really a clitic, but also the more general question of whether a clitic must always be unaccented. The position adopted here as the most reasonable is the following: (1) a clitic must indeed always be unaccented (otherwise how could we recognize one?); (2) a word, however, can be a clitic in some occurrences and non-clitic in others; and (3) in these examples, the definite forms technically show the NOUN as proclitic to the accented article rather than the article as enclitic to the noun. The notion that a clitic need not be unaccented seems conceivable only if one insists on assigning a word ALWAYS to either clitic or non-clitic status. Such an idea is contradicted by well-known facts about clitics occurring as reduced, unaccented forms of words otherwise appearing with full accent (as in such examples as *I've read it* vs. *I have read it*). In the Bulgarian examples, then, the article is usually a clitic, but it sometimes takes the accent itself, making the preceding word proclitic to it. In such a case, where a word is most commonly clitic, but in some cases causes an adjacent word to be clitic to it instead, it is proposed to use the term ANTICLITIC.

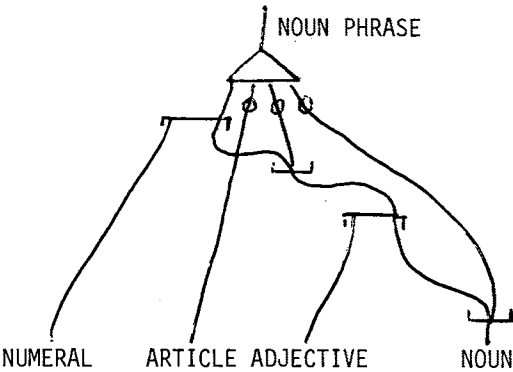
In detail, the accent alternations here can be handled in much the same fashion as accent alternations involved with inflectional affixes. In Lockwood 1982, a paper prepared without full appreciation of the clitic + anticlitic status of the Bulgarian article, they were treated in just such a fashion.

3. A Synopsis of the Bulgarian Definite Article: Lexology, Morphology, and Phonology. This section summarizes a treatment of the Bulgarian definite article on three structural strata: the lexology (dealing with surface syntax), the morphology, and the phonology. In a more complete study, semological factors would also be of interest, but they are beyond the scope of this study and of no direct relevance to the points considered here.

3.1 Lexology: The Article as a Noun-Phrase Constituent. The lexology of the definite article involves two facets: (1) its placement among other constituents and (2) its concord with the head of the phrase. To the extent shown by data considered in this article, it can follow either a numeral, an ordinary adjective, or a noun--whichever of these is the first phrasal constituent. These syntactic matters are summarized in the diagram of Figure 1, which illustrates a general approach to second-position syntax which may be relevant for other examples (not confined to clitics) in other languages. It specifies that the first position in the phrase will be filled by a numeral if possible, otherwise by an adjective if possible, and otherwise by a noun. The article, if taken at all, must come immediately after this initial constituent, and other optional possibilities follow.

No formalization of the facts of concord will be attempted here. Let it suffice to simply note that the article, like the other non-head constituents will show concord in gender and number with the head. Plural will be specified if pertinent, and singular will be unmarked; masculine or feminine gender will be

Figure 1. *BASIC LEXOLOGY FOR THE CORE NOUN PHRASE IN BULGARIAN.*



specified if pertinent, otherwise the unmarked neuter will occur. Some lexemic representations showing concord are presented in Table V. In these representations, the article root is given as ^L/T/, and the inflectional lexemes are ^L/MASCULINE/, ^L/FEMININE/, and ^L/PLURAL/.

Table V. *LEXEMIC REPRESENTATIONS FOR SOME BULGARIAN NOUN PHRASES CONTAINING ARTICLES*

PHRASE WITH GLOSS	LEXEMIC REPRESENTATION			
1. ednata stara kniga THE ONE OLD BOOK	edn FEM	T FEM	star FEM	knig (FEM) ⁵
2. starite knigi THE OLD BOOKS	star PLURAL	T PLURAL	knig PLURAL	
3. ednoto staro pole THE ONE OLD FIELD	edn FEM	T FEM	star (FEM)	pole
4. starite poleta THE OLD FIELDS	star PLURAL	T PLURAL	pole PLURAL	
5. ediniĵa(t) star konj THE ONE OLD HORSE	edn MASC	T MASC	star MASC	konj (MASC)

3.2 Morphology: The Inflection and Status of the Definite Article

For one thing, the morphology of the Bulgarian article must indicate the realization of the pertinent lexemes in terms of morphemes, these in turn being realizable in terms of morphons ready to connect further to the phonology of the language. It must also provide any necessary boundaries around morphological words. In this particular case it will treat the article as a morphological word, but its status as a close enclitic will mean that it will not be realized as a separate phonological word, since it will not be preceded by a word-boundary morphon to separate it from the preceding morphological word.

A general schema for assigning boundaries before morphological words was presented in Lockwood 1987 (Figure 3, page 241). The application of this schema to full words, the close enclitic article, and some of the loose enclitics is given in Figure 2. This network effectively blocks the occurrence of a boundary morphon before the close enclitic, while other boundary morphons are shown to occur before other types of words.

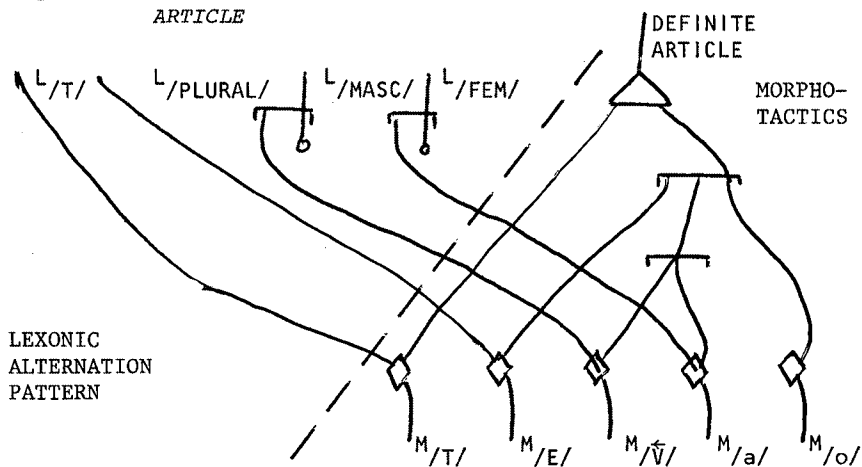
Table VI. REPRESENTATIONS OF THE DEFINITE ARTICLE ON THREE LEVELS.

LEXEMIC	MORPHEMIC	CLASSICAL EXAMPLES PHONEMIC	
$L/T/ \cdot L/PLURAL/$ [$L/MASC/$, $L/FEM/$]	$M/T/$ $M/E/$	$\left\{ \begin{array}{l} /ta/ \\ /te/ \end{array} \right.$	seláta THE VILLAGES sinovéte THE SONS
$L/T/ \cdot L/MASC/$	$M/T/$ $M/\check{V}/$	$\left\{ \begin{array}{l} /ta/ \\ /to/ \\ /\text{ə}(t)/ \end{array} \right.$	baštáta THE FATHER číčoto THE PATERNAL UNCLE bráta(t) THE BROTHER
$L/T/ \cdot L/FEM/$	$M/T/$ $M/a/$	$/ta/$	másata THE TABLE
$L/T/$	$M/T/$ $M/o/$	$/to/$	kúčeto THE DOG

the morphon $^{MN}T/$, usually realized as $/t/$, is realized as $/\text{ə}/$.

These matters of morphotactics and lexomorphemic realization may be formalized as in Figure 3. This figure shows how the four lexemes are realized in terms of the article root and the four suffixes, the masculine and feminine lexemes being subject to zero realization in the presence of plural, where the morphotactics cannot accommodate either of them.

Figure 3. LEXEMES AND MORPHEMES FOR THE BULGARIAN DEFINITE ARTICLE



3.3 Phonology: The Segmental and Suprasegmental Morphophonemics.

Nearly all the segmental data to be accounted for is summarized by the alternations shown in Table VII. These alternations involve the morphons ^{MN}/T/, ^{MN}/E/, and ^{MN}/Ũ/ (each of which also serves here to realize a single morpheme as well). Time and space do not permit the integration of these alternations into the total phonology, so this summary will have to serve. All the alternations are morphonic, to be treated as alternate realizations of whole segments conditioned in terms of surrounding segments.

Table VII. *REALIZATION OF MORPHONS INVOLVED IN THE BULGARIAN DEFINITE ARTICLE.*

MORPHON ENVIRONMENT REALIZANT EXAMPLE

^{MN} /T/	C__Ũ	ə[t]	gradTŨ/gradə(t)	THE CITY
	elsewhere	t	ženáTa/ženáta	THE WOMAN
^{MN} /E/	aT__	a	listáTE/listáte	THE LEAVES
	elsewhere	e	róbITE/róbite	THE SLAVES
^{MN} /Ũ/	aT__	a	slugáTŨ/slugáta	THE SERVANT
	V _{LO} T__	o	djádotoTŨ/djádoto	THE GRANDFATHER
	elsewhere	∅	cárjTŨ/cárjə(t)	THE TSAR

Before discussing the suprasegmental alternations involved in the occasional anticlititic status of the article, let us consider the additional data in Table VIII, which illustrates one more alternation involved in the occurrence of the article as enclitic to a masculine singular adjective. When we look at these masculine forms we see two special things: (1) there may be an overt suffix /i/ in the masculine, though zero is in fact the more regular alternate; (2) before the clitic /ə(t)/ the masculine adjective is always followed by /ij/, regardless of whether there is an /i/ at the end of the unarticulated form. The first is a morphemic matter, depending on particular roots and stem-forming suffixes. Conceivably we could view this data as evidence for additional forms of the article /ijə(t)/, /jə(t)/, but it is proposed here that the matter be treated in terms of allomorphs of a masculine singular adjectival suffix accompanied by certain morphophonemic alternations. We can say that the suffix is realized by the morphon ^{MN}/i/ in the class including /ftóri/, and otherwise as

Table VIII. *UNARTICULATED AND ARTICULATED FORMS OF BULGARIAN ADJECTIVES*

	^{MN} /xúbav/ PRETTY		^{MN} /ftór/ SECOND	
	UNARTICULATED	ARTICULATED	UNARTICULATED	ARTICULATED
MASCULINE	xúbaf	xúbavijə(t)	ftóri	ftórijə(t)
FEMININE	xúbava	xúbavata	ftóra	ftórata
NEUTER	xúbavo	xúbavoto	ftóro	ftóroto
PLURAL	xúbavi	xúbavite	ftóri	ftórite

^{MN}/I/ (a morphon subsuming the alternation of /i/ with zero).
The following formulas treat the alternations involved:

$$\begin{array}{l} \text{I} \parallel \text{---} \text{T} / \text{i} \qquad \qquad \qquad \emptyset \parallel \text{i, I} \text{---} \text{T} / \text{j.} \\ \parallel \text{-----} / \emptyset \end{array}$$

For the accentual alternations, little has to be said beyond what was presented in Lockwood 1982: the treatment given there in connection with nominal forms specifically is compatible with virtually all the relevant data. As a close clitic, the article works just like a suffix as far as its phonology is concerned. The examples presented in Table IV, for example, can be handled as in part 1 of Table IX, which is based on the principles of the 1982 paper except as concerns the representation of the definite article on the morphonic level as ^{MN}/TV/ with an accent. The last column of Table IX gives numerical reference to four principles stated at the bottom of the table.

Table IX. ACCENT ALTERNATIONS INVOLVING THE ARTICLE AND SUFFIXES.

MORPHONIC	CLASSICAL PHONEMIC	GLOSS	ACCENT REALIZATION
(1)			
um	úm	MIND	(1)
umTV	umá(t)	THE MIND	(2)
umové	umové	MINDS	
vir	vír	POOL	(1)
virTV	virá(t)	THE POOL	(2)
vírové	vírove	POOL	(3)
dól	dól	RAVINE	(4)
dólTV	dólá(t)	THE RAVINE	(3), (4)
dólové	dólove	RAVINES	(3), (4)
(2)			
kost	kóst	BONE	(1)
kosttá	kostá	THE BONE	
kosti	kósti	BONES	(1)

PRINCIPLES OF ACCENT REALIZATION:

- (1) A full word with no morphonic accent gets phonemic accent on the first (or only) syllable.
- (2) Accent on an unrealized /V/ is realized on the preceding phonemic vowel.
- (3) When a word has multiple morphonic accents, only the first in linear order is realized.
- (4) The preaccent morphon /→/ is realized as accent on the next syllable, and if there is no next syllable in the word, as accent on its own syllable.

Part (2) of this table brings in the accentuation of another type of anticlitic case not previously mentioned in this paper. It was totally accounted for in the previous work. The remaining cases of anticlitic occurrence involve the accentuation of the plural article form /te/ with most numerals. Examples are pro-

vided in Table X. The treatment of this material does require some elaboration of the accentuation patterns considered for nominal forms alone in Lockwood 1982. A final answer would have to await a thorough study of the accentual alternations in the language as a whole. A possible approach to a workable solution would involve the assignment of a special accentual lexeme to the article in a syntactic environment following a numeral. This would properly be a matter of lexology (rather than phonology or morphology) because its conditioning would be based on the lexemic identity of an adjacent word.

Table X. *ARTICULATED AND UNARTICULATED NUMERALS IN BULGARIAN.*

UNARTICULATED	ARTICULATED	G L O S S
čétiri	četirité	(THE) FOUR
pét	peté	(THE) FIVE
šést	šesté	(THE) SIX
sedem	sedemté	(THE) SEVEN

4. *Conclusion.* In summary, this is a relatively complex case of clitic occurrence. It serves to emphasize the point that clitics can be recognized most readily in a multistratal framework which defines them in terms of a discrepancy between the statuses of realizational correspondents on different strata rather than as a specific class recognized on one stratum. The closest this approach comes to setting up a class of clitics as such is in the morphology, where one or more classes are recognized for the purpose of assigning or blocking boundaries between morphological words (as in Figure 2). Even here, we have to remember that a given word will not always have to be a clitic. Rather a VARIABLE (as opposed to a CONSTANT) clitic may vary between clitic and full word and, as this data illustrates, between clitic and anticlitic. The class labeled as close enclitics in Figure 2, in fact, would be more properly labeled as "close enclitics/anticlitics", the difference between the subtypes coming only with consideration of the phonemic realizations of the particular combinations with particular classes of words.

The occurrence of both close and loose enclitics in a language like Bulgarian would further seem to justify different types of phonological words, a point not fully brought out in Lockwood 1987. The technical term PHONOLOGICAL WORD might properly be reserved for any stretch between junctural elements, and then in various languages, certainly including Bulgarian (and Polish), we would also need to recognize an ACCENTUAL WORD, which includes one accented phonological word and (optionally) one or more unaccented phonological words, which would be the loose clitics.

NOTES

*The examination of the Bulgarian data resulting in this paper was partly inspired by a comment made by Professor William J. Sullivan following the presentation of Lockwood 1987.

1. In a footnote to his article (Note 2, p. 277) Elson (1976) does cite with seeming approval the conclusion of the Bulgarian linguist Stojanov that "the only standard term applicable to the article is *morpheme* qualified by a statement of the characteristics which are unique to it" (cf. Stojanov 1965:10-11). The analysis in the present paper would not agree that the article can properly be termed a "morpheme". Rather, it is treated as an inflected word containing both a root and a suffix.
2. For instance, the verb TO BE has present-tense forms which are ordinarily enclitic, namely /səm/ FIRST SINGULAR, /si/ SECOND SINGULAR, /e/ THIRD SINGULAR, /sme/ FIRST PLURAL, /ste/ SECOND PLURAL, /sə/ THIRD PLURAL. According to Scatton (1983:243) these forms "may be stressed only under rather special circumstances".
3. All transcriptions shown in this paper represent the most careful orthoepic pronunciation of Literary Bulgarian. This practice is commonly followed (cf. Aronson 1968, Scatton 1983) and is adopted here merely for convenience. In the colloquial speech of even well-educated speakers, the unaccented vowels of lower aperture, shown here as /e a o/, are commonly identical with their respective higher counterparts /i ə u/. According to the account given by Scatton (1983:54-57) there is a stylistic continuum between the most careful style represented here, and the fully colloquial style with complete neutralization of aperture contrasts in unaccented vowels. There the distinction between /a/ and /ə/ is most likely to be absent, that between /o/ and /u/ is next most frequently neutralized, while the difference between /e/ and /i/ is lacking only in the broadest colloquial speech style.
4. In WRITTEN Bulgarian, the /ə/ vs. /ət/ forms of the masculine singular article represent a case difference between accusative and nominative, respectively (a distinction elsewhere found only in pronouns). Observers generally agree that this distinction is not maintained in the colloquial language, Lord (1962: 20) stating that the final orthographic t "is not pronounced... in the spoken language", but Scatton (1983:165) stating that the two forms "are in free variation".
5. Overt gender markers for nouns have been given in parentheses because there are different ways of viewing their relevance. According to the traditional view (represented in Lockwood 1972, Section 4.6), nouns should not be marked for gender, since they lack the possibility of contrastive gender inflection. A newer view set forth in Lockwood 1988, however, points out advantages of specifying the nominal gender in lexemic representations in order to minimize the amount of classification need in the morphology. Bulgarian is almost certainly one of the languages to which such considerations would be applicable.
6. It should be noted that there was a labeling error in this particular figure of the 1982 paper: the label Phonological Word Types should have been Morphological Word Types (since the diagram represents a part of the morphology, which defines MORPHOLOGICAL, not phonological units).

7. We would have, for example, edínijə(t) stár číčo THE ONE OLD PATERNAL UNCLE beside číčoto THE PATERNAL UNCLE, and dóbrijə t baštá THE GOOD FATHER beside baštáta THE FATHER.

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PREDICTION AND EXPLANATION IN RUSSIAN TEMPORAL LOCUS

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0. Preliminary Comments

The generalizations and descriptions that result from the application of the scientific method are inductive in nature. But the descriptions can and should be used deductively to predict new data and new classes of data. In fact, one measure of the success of any description and of the theory which underlies it is the extent of data which can be predicted. In the ideal situation, they will predict all the new data, or at least the classes of new data. In addition, they will also predict what classes of data cannot occur. Negative predictions of this sort are as important as the positive and often harder to come by, at least in the literature. The present study concentrates on negative predictions.

1. Background

The present study had its inspiration in the work of David Bennett (1976) and continues a series of studies which have appeared in the *Eleventh LACUS Forum* (1984), *Forum Linguisticum* 1984, and *Language Sciences* (1986). It is in the same family of research as Jakobson's (1958) studies on the *Gesamtbedeutungen* of cases in Russian. That is, the present study is a functional analysis of locus expressions formally realized by combinations of prepositions and case endings. Unlike van Schooneveld (1978), however, I have not forced the description into the specifics of the Jakobson model. Van Schooneveld describes the prepositions in terms of semantic roles like 'marginality'. My description, like Bennett's, refers to the characteristics of Euclidean space.

I.1 The Spatial Description

A summary of the descriptions of spatial expressions is given in table 1 (following page). The prepositions and their functional descriptions are repeated singly in (1), which follows table 1.

I.2 Some Generalizations

Time and space considerations preclude a full justification of the generalizations that can be drawn from the description given in table 1, but four general statements relevant to the present study should be made. First, Russian locus expressions are realized formally by a preposition-case pairing, wherein the preposition precedes a noun phrase and the case is realized on each adjective or noun in the noun phrase. The occurrence of a preposition signals the role LOC. That is, the preposition itself is the mark of an overt locus expression. The case which appears realizes the defining or directional role involved.¹ Finally, the preposition itself communicates geometric information pertinent to the object and the locus. This geometric information allows us to predict which spatial expressions communicate temporal locus and which do not.

I.3 Predictions

As remarked above, there are in general two logical types of predictions: positive and negative. In this case, the positive predictions tell which spatial prepositions have temporal usages and how the temporal usages differ from the spatial. The need for positive predictions is generally recognized, even when the predictions made are less than successful. Conversely, the need for making negative predictions often seems to be forgotten, even when the predictions themselves are fairly obvious. This study, however, is restricted to negative predictions, telling which prepositions do not have temporal usages. Now recall that the prepositions communicate information about the spatial geometry, in Euclidean terms. So in order to predict which of them will not have temporal usages, it is necessary to consider the geometry of time in a Euclidean system and see how it differs from the geometry of space.

prep	R O L E	<D> L O C T	<-DIR-> G O T H N C	GEOMETRIC																	
				A	C	C	X	I	I	L	L	P	P	P	P	S	S	S	S	S	S
				T	T	N	N	O	R	T	N	N	A	G	R	N	S	R	U	R	P
				T	T	N	N	C	R	F	T	T	T	T	T	T	T	T	T	T	T
v ^a	+	+	+																		
na ^a	+	+	+																		+
pri	+																				
pered	+		+		+																
nad	+		+																		+
pod ^b	+		+		+																
za ^b	+		+		+																+
meždu ^c	+		+																		
k	+		+																		
po ^a	+		+		+																
čerez	+				+																+
skvoz'	+				+																
o	+		+																		+
iz	+				+																
iz-za	+				+																+
iz-pod	+				+																
s	+				+																+
ot	+				+																
do	+		+																		+
mimo	+		+																		+
vokrug	+																				+
okolo	+																				+
bliz	+																				+
vblizi	+																				+
u	+																				+
vozle	+																				+
podle	+																				+
protiv	+																				+
vdol'	+																				+
vne	+																				+
vnutri	+																				+
vzadi	+																				+
vperedi	+																				+
sredi	+																				+
posredi	+																				+
	L O I C	S I T	G O	P T H	X T N	S R F	A N T	C N T	C O N	C R C	X T R	I N F	I N T	L A T	L G T	P R T	P N T	P S T	P R X	S U P	S R F

Figure 1: Spatial Functions of Russian Prepositions

SEMANTIC ROLE TYPES

Defining Roles:

LOC = Locus
SIT = Situs

Directional Roles:

GO = Goal
PTH = Path
XTN = Extent
SRC = Source

Geometric Roles:

ANT = Anterior
CNT = Center
CON = Contra
CRC = Circum
XTR = Exterior
INF = Inferior
INT = Interior
LAT = Latus
LGT = Length
PRT = Part
PNT = Point
PST = Posterior
PRX = Proximate
SUP = Superior
SRF = Surface

Morphemic Cases:

N = nominative
A = accusative
G = genitive
L = locative(prepositional)
D = dative
I = instrumental

NOTES:

^aSIT, GO, or neither

^bwith or without GO

^cwith or without PRT

^deither GO or XTN

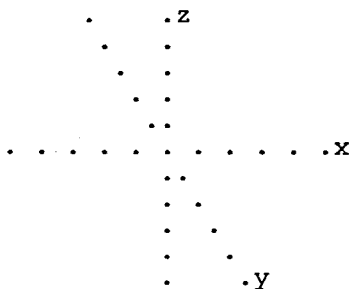
(1)				
a.	LOC & INT	::	<i>v</i> + L	<i>v komnate</i> 'in the room'
b.	LOC & INT & GO	::	<i>v</i> + A	<i>v komnatu</i> 'into the room'
c.	LOC & INT & SIT	::	<i>v</i> + 2L	<i>v snegu</i> 'in the snow'
d.	LOC & SRF	::	<i>na</i> + L	<i>na stene</i> 'on the wall'
e.	LOC & SRF & GO	::	<i>na</i> + A	<i>na stenu</i> 'onto the wall'
f.	LOC & SRF & SIT	::	<i>na</i> + 2L	<i>na polu</i> 'on the floor'
g.	LOC	::	<i>pri</i> + L	<i>pri vokzale</i> 'at the station'
h.	LOC & PTH & ANT	::	<i>pered</i> + I	<i>pered domom</i> 'before the house'
i.	LOC & PTH & SUP	::	<i>nad</i> + I	<i>nad domom</i> 'over the house'
j.	LOC & PTH & INT	::	<i>meždu</i> + I	<i>meždu domami</i> 'among the houses'
k.	LOC & PTH & INT & PRT	::	<i>meždu</i> + G	<i>meždu domov</i> 'between the houses'
l.	LOC & PTH & INF	::	<i>pod</i> + I	<i>pod stolom</i> 'under the table'
m.	LOC & PTH & INF & GO	::	<i>pod</i> + A	<i>pod stol</i> '(to) under the table'
n.	LOC & PTH & PST	::	<i>za</i> + I	<i>za stolom</i> 'at/behind the table'
o.	LOC & PTH & PST & GO	::	<i>za</i> + A	<i>za stol</i> '(to) behind the table'
p.	LOC & GO	::	<i>k</i> + D	<i>k stolu</i> 'toward the table'
q.	LOC & LGT & GO	::	<i>po</i> + D	<i>po koridoru</i> 'down the hall'
r.	LOC & LGT & XTN	::	<i>po</i> + A	<i>po šeju</i> 'up to the neck'
s.	LOC & SRF & XTN	::	<i>čerez</i> + A	<i>čerez ulicu</i> 'across the street'
t.	LOC & INT & XTN	::	<i>skvoz'</i> + A	<i>skvoz' okno</i> 'through the window'
u.	LOC & SRF & LAT & GO	::	<i>o</i> + A	<i>o skaly</i> 'against the rocks'
v.	LOC & SRC	::	<i>ot</i> + G	<i>ot steny</i> 'away from the wall'
w.	LOC & SRF & SRC	::	<i>s</i> + G	<i>so steny</i> 'off the wall'
x.	LOC & INT & SRC	::	<i>iz</i> + G	<i>iz komnaty</i> 'out of the room'
y.	LOC & PTH & PST & SRC	::	<i>iz-za</i> + G	<i>iz-za doma</i> 'from behind the house'
z.	LOC & PTH & INF & SRC	::	<i>iz-pod</i> + G	<i>iz-pod stola</i> 'from under the table'
aa.	LOC & PRX	::	<i>okolo</i> + G	<i>okolo doma</i> 'around/near the house'
bb.	LOC & PRX & PRT	::	<i>bliz</i> + G	<i>bliz doma</i> 'near the house'
cc.	LOC & PRX & PRT & INT	::	<i>vbliži</i> + G	<i>vbliži doma</i> 'in the vicinity of the house'
dd.	LOC & PRX & PNT	::	<i>u</i> + G	<i>u doma</i> 'by the house'
ee.	LOC & PRX & LAT	::	<i>vozle</i> + G	<i>vozle doma</i> 'beside the house'
ff.	LOC & PRX & LAT & INF	::	<i>podle</i> + G	<i>podle otca</i> 'at father's elbow'
gg.	LOC & PRX & LAT & LGT	::	<i>vdol'</i> + G	<i>vdol' dorogi</i> 'along the road'
hh.	LOC & PRX & PTH	::	<i>mimo</i> + G	<i>mimo doma</i> 'past the house'
ii.	LOC & PRX & CRC	::	<i>vokrug</i> + G	<i>vokrug doma</i> '(all) around the house'
jj.	LOC & PRX & GO	::	<i>do</i> + G	<i>do doma</i> 'as far as the house'
kk.	LOC & PRX & INT	::	<i>protiv</i> + G	<i>protiv struji</i> 'against the current'
ll.	LOC & PRT & XTR	::	<i>vne</i> + G	<i>vne doma</i> 'outside of the house'
mm.	LOC & PRT & INT	::	<i>vnutri</i> + G	<i>vnutri doma</i> 'inside of the house'
nn.	LOC & PRT & PST	::	<i>vzadi</i> + G	<i>vzadi doma</i> 'in back of the house'
oo.	LOC & PRT & ANT	::	<i>vperedi</i> + G	<i>vperedi doma</i> 'in front of the house'
pp.	LOC & PRT & CNT	::	<i>sredi</i> + G	<i>sredi lesa</i> 'deep in the forest'
qq.	LOC & PRT & CNT & PNT	::	<i>posredi</i> + G	<i>posredi lesa</i> 'in the middle of the forest'

II. The Geometry of Time

II.1 Euclidean Space

The geometry of space is the familiar three-dimensional Euclidean geometry given in figure 2. Euclidean geometry appeals so naturally to our view of the universe that it not only forms the basis of the artificial systems of Euclidean geometry and Newtonian physics but also serves as a

Figure 2

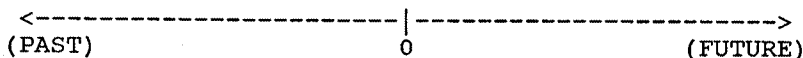


reasonable basis for the naturally-evolved system of locus expressions. It includes non-dimensional points, one-dimensional lines of indefinite extent, two-dimensional areas (or surfaces) of indefinite extent, and three-dimensional solids of any size or shape. It includes the possibility of location in any of six directions relative to the item (positive or negative orientation on each of three axes). It includes location within a three-dimensional object, within the boundaries of a surface, or within the endpoints of a line segment. It also includes contact with any type of surface, even one of zero extent (a point) or a one-dimensional line. The spatial expressions in Russian demonstrate the ability of the language to communicate these geometric facts in a straight-forward fashion.

II.2 Euclidean Time

The geometry of time in a Euclidean system differs from the geometry of space. First, it is restricted to two orientations relative to a single axis, as in figure 3. At any given time the present

Figure 3



moment is at the origin, the future is to the right and the past is to the left. With passing time, according to this metaphor, the origin is moving to the right at the rate of one second per second. But at any given moment it is fixed relative to the past and future.²

In this framework we can refer to past, present, or future. Within each of these (or overlapping from one to another) we can refer to a point in time (.), a continuous period (-----), or a period consisting of a series of equidistant points (.....). Either type of period (continuum or pointwise) can be further modified by having its extent or beginning or ending point specified. Either endpoint can be specified in combination with the extent, and both endpoints can be specified, alone or with the extent.³ Finally, note that all these concepts are limits on the time line. It is also possible to make a time reference without somehow limiting the time line, as in *the earth goes round the sun*. For present purposes it makes no difference whether we argue that the whole of eternity is crammed into the moment of speech or whether the present tense in English can communicate past and future; I would argue that the example simply makes a present time comment without limiting the extent in time. In the absence of such a limitation, the time refer-

ence can be extended to both past and future without restriction.

If a Euclidean geometry of time and space underlies the locus expressions in Russian and if my description of the spatial locus expressions is reasonable, the negative predictions are easily made. I turn to them now.

III. Negative Predictions

III.1 Extra Dimensions

Euclidean time has only one dimension. For simplicity, I call it the *x*-axis. In addition to the *x*-axis, Euclidean space requires reference to *y*- and *z*-axes. It therefore follows that no preposition whose geometric component(s) refer to the *y*- or *z*-axes or both can have temporal usages. A quick examination of the componential analysis of prepositions given in figure 1 (or in [1]) will test this prediction.

There are several geometric roles which invoke three-dimensional volumes or two-dimensional planes, either by explicitly requiring a shape or surface of finite size or implicitly by referring to a dimension beyond a line. There are also combinations of roles which invoke a second or third dimension. I consider each of these in turn.

III.2 INTERIOR

Consider first the role INTERIOR (INT). INT is related to the prepositions *v* 'in', *meždu* 'between', *iz* 'out of', *skvoz'* 'through', *vbliži* 'in the vicinity of', and *vnutri* 'inside of'. The most frequent use of this role refers to a three-dimensional object of some finite size. In such an instance, no temporal usage of the preposition is possible. Reference to a three-dimensional object of finite size is necessary for *skvoz'* and *vnutri*. *Skvoz'* only communicates passage through the object and *vnutri* only communicates location within it. These prepositions should not occur in temporal expressions, and they do not (P1977:125-26, 102, and 105-6; nor are temporal usages found in AD). By the same reasoning, *v* and *iz* should also have no temporal usages with this sense of INT, and they do not.

A second sense of INT is location on a surface but within fixed boundaries, as in *v strane* 'in the country'. This is a two-dimensional sense which should also lack temporal usages, and no such usages of *v* or *iz* are found. More, the combination of INT with PROXIMATE (PRX) found in *vbliži* also requires a two-dimensional area. Thus *vbliži* is also without temporal usages.

Conversely, usages of *v* or *iz* which do not refer to volumes or surfaces should have temporal usages, and they do. Similarly, *meždu* has the component PATH, which is geometrically a line, and it also has temporal usages. These usages are predictable but beyond the scope of the present study.

III.3 The *z*-axis

Now consider the geometric roles SUPERIOR (SUP) and INFERIOR (INF). They refer to the *z*-axis above or below the origin, where the *z*-axis intersects with the *x*-axis. SUP and INF therefore violate the one-dimensional restriction on temporal geometry and prepositions related to these roles should not occur. Indeed *nad*, which is related to SUP and refers to loci above some surface, has no temporal usages (P1977:136). The preposition *pod*, which is related to INF normally refers to loci below some surface. In this sense *pod* has no temporal usages.⁴ Moreover, the SOURCE expression with INF, *iz-pod* 'from under', has no temporal usages (P1977:107-8).

III.4 The *y*-axis

There are no other prepositions that require displacement along the *z*-axis, but there are prepositions whose non-occurrence in temporal expressions can be predicted by their relation to the *y*-axis. The *y*-axis loci violate the geometry of time just as the *z*-axis loci do, sometimes explicitly, sometimes implicitly.

The most obvious candidate for an explicit relation to the *y*-axis is the role LATUS (LAT). Four prepositions with spatial usages are related to LAT, and all four lack temporal usages. These are the prepositions *o* 'against' (P1977:135), *voze* 'beside' (P1977:102), *podle* 'beside and below' (P1977:111), and *vdol'* 'along, next to' (P1977:101).

There are also geometric roles which include the loci communicated by LAT. For example, the role CIRCUM (CRC) communicates a location which surrounds (is on all sides of) the object. If CRC could be restricted to those points at which it crosses the *x*-axis there would be no problem. But CRC refers to all sides of the object. Thus it includes not only the crossover points but those areas off the axis communicated singly by LAT. This eliminates temporal usages for *вокруг* (P1977:103).

Like CRC, the combination of PRX with PATH also includes the LAT loci. The only way you can be near a path is by not being on it, i.e. by being removed from it along either the positive or negative *y*-axis. This eliminates temporal usages for *мимо* (P1977:108). Similarly, there are no temporal usages for *из-за* 'from behind' (P1977:106). Movement from behind some object or point requires a shift from the reference axis in either the lateral or vertical direction, i.e. movement along either the *y*- or *z*-axes. Again, the geometry of time is violated.

Next consider the role CONTRA (CON), which communicates an opposite orientation. There are several possible interpretations of this role if at least two dimensions are available, but these can not have temporal applications in time. In the context of a single dimension, CON has only a single interpretation. That is 'in the opposite direction' or 'having the opposite orientation'. But time moves in only one direction, so even this interpretation of CON can not have temporal usages. Only *против* is related to CON, and it has no temporal usages (P1977:111).

III.5 PART

Now consider the role PART. It is related to those prepositions which communicate position with regard to the inherent geometry^o of the object. But remember that time has inherent geometry in only one dimension. Thus, all those prepositions for which PART combines with roles that result in a second or third dimension will have no temporal usages. This eliminates *близ* 'near', *вне* 'outside of' (P1977:101), *вперед* 'in front of', and *взад* 'in back of'. It would also eliminate *вблизи* 'near' and *внутри* 'inside of' (P1977: 102), which were eliminated on distinct but related grounds above.

PART also contributes to the apparently anomalous situation involving the combinations of *между* 'between, among' with genitive and instrumental cases. As mentioned above, *между* is always related to LOC, PATH, and INT, and it is optionally related to PART. It communicates a locus on the interior of some path (a line between two end-points). When the role PART is present, it governs the genitive case. When the role PART is absent, it governs the instrumental case, as is normal for PATH expressions. In either case, *между* translates as 'between' or 'among', depending on context.

Here the anomaly arises. The object of *между* defines the end-points of the line involved. The items at the end-points can be linguistically identical. If they are, a plural object results: *между деревьев* ^(G)/*деревьями* ^(I) 'between the trees'. If the items at the end-points are linguistically distinct, a compound object results: *между сосной и елью* ^(I) 'between the pine and the fir'. As indicated, the genitive case cannot occur with a compound object, while the instrumental case can occur with either compound or plural.

At first glance this may seem like an arbitrary distinction, e.g. one which arises from a change in progress: the usage with genitive is apparently older than the usage with instrumental. However, that is at best a superficial observation rather than an explanation and is far from a prediction. Prediction is possible here. Remember that the genitive case realizes the role PART in this combination, and PART operates in regard to the inherent geometry of some thing. A compound object is made up of two distinct things, so it is not divisible into parts of some whole. Conversely, a plural object may be two distinct individuals of the same sort (as in two knives) or it may be two individuals, each of which is part of an integrated whole (as in the two blades of scissors or the trees in a forest). Here the instrumental case realizes the relative geometry between distinct individuals and the genitive case realizes the inherent geometry of an integrated whole.

Not only is this a reasonable distinction, one compatible with other parts of the description, but it predicts that the usage with instrumental should be more common than the usage with genitive. We can always define a relative geometry, but only a restricted set of things have

lative geometry. In addition, this distinction predicts that the genitive usage is not possible in temporal expressions. On the temporal axis a path is a line of finite extent between two times, which are its end-points: *meždu p'atju i semju* 'between 5 and 7'. In order to have the genitive case the end-points would have to be identical. That is, they would define a single point in time, not a line. Since a non-dimensional point has no topologically distinct parts in a Euclidean framework, the conditions for the genitive case can not arise in a temporal expression.

III.6 Summary

The considerations given in section III predict that eighteen of the prepositions used to communicate spatial locus have no temporal usages. Those prepositions are listed in table 2.

Table 2: Preposition-Case Pairings with Temporal Usages Predictably Lacking

<i>nad</i> + I	'above'	<i>vperedi</i> + G	'in front of'
<i>skvoz'</i> + A	'between'	<i>vzadi</i> + G	'in back of'
<i>o</i> + A	'through'	<i>vnutri</i> + G	'inside of'
<i>meždu</i> + G	'against'	<i>vbliži</i> + G	'in the vicinity of'
<i>iz-za</i> + G	'from behind'	<i>vokrug</i> + G	'(all) around'
<i>iz-pod</i> + G	'from beneath'	<i>vozle</i> + G	'beside'
<i>bliz</i> + G	'near'	<i>podle</i> + G	'beside and below'
<i>vdol'</i> + G	'along'	<i>protiv</i> + G	'opposite'
<i>mimo</i> + G	'past'	<i>vne</i> + G	'outside of'

According to the standard references, these predictions are correct. This is a strong argument in favor of the cogency and coherence of the spatial analysis. However, the true test of the spatial description's ability to make negative predictions about locus expressions is in its failures. I turn now to those cases where the predictions seem to fail.

IV. Missing Predictions

There are three more spatial prepositions which do not have temporal usages, at least according to standard references. These are *za* (+ I) 'behind, beyond', *u* 'by', and *posredi* 'in the middle/center of' (P1977:139-41, 113-14, and 111); cf. also the corresponding entries in AD). Unlike the situation with *meždu* + G, however, the lack cannot be predicted from the geometric characteristics of the prepositions. Worse, by the standards I propose above, the geometric characteristics of *za*, *u*, and *posredi* predict that they should have a set of temporal usages compatible with their spatial ones. If this discrepancy could not be explained, it would seriously detract from the capabilities the description exhibited in section III.⁸ I begin with a discussion of *u* and *posredi*.

IV.1 *u* and *posredi*

Not only are *u* 'by' and *posredi* 'in the center of' lacking in temporal usages, in spite of geometric characteristics which are compatible with temporal usages, but they are closely related to the prepositions *okolo* 'near' and *sredi* 'amid', which have exactly the temporal usages predicted from their geometric characteristics.

It will be useful to scrutinize the two pairs of prepositions. The preposition-case pairings and their sememic role relations are summarized in table 3 (next page). The pairing is in column A, with a gloss in column B, the sememic role specification in column C, and a comment on whether they have temporal usages in column D.

All four of these preposition-case pairings can occur in spatial expressions. The first two, *okolo* and *u*, overlap in many environments. They are generally considered close synonyms. The same could be said of the latter two, *sredi* and *posredi*. This by itself gives no clue as to why one member of each pair occurs in temporal expressions and the other does not. The only general statements that can be made are simple observations: in each pair the more highly marked

Table 3: Discrepancies in the temporal usages of four functionally related prepositions

	A	B	C	D
	<i>okolo</i> + G	'near'	LOC & PRX	Yes
	<i>u</i> + G	'by'	LOC & PRX & PNT	No
	<i>sredi</i> + G	'amid'	LOC & PRT & CNT	Yes
	<i>posredi</i> + G	'middle'	LOC & PRT & CNT & PNT	No

preposition is related to POINT (PNT) and it is the less highly marked preposition which occurs in temporal expressions. This statement is no explanation at all. Nor does it predict that *u* and *posredi* can not occur in temporal expressions. It says only that the less highly marked member of each pair is the unmarked choice for temporal expressions.

If that is the strongest generalization that can be adduced in this instance, it suggests only that the presumably non-occurring member of each pair is not really lacking in temporal expressions but merely rare. I once heard *posredi noći* in the sense 'at the deepest part of the night'. This is a reasonable expression, but I do not know whether it occurs consistently or regularly, and I do not know whether *u* occurs with temporal expressions at all. This means that the inference in this case is hypothetical. However, as it is both a reasonable and fully empirical claim upon which no further hypotheses rest, it can be adopted without further discussion, with its verification deferred to subsequent research. Still, the occurrence of *posredi noci* in spontaneous discourse suggests that its apparent lack is more of a characteristic of descriptive grammars than of the language itself. In any case, it appears that we need not predict the lack of *u* and *posredi* in temporal expressions.

IV.2 *za*

One preposition-case pairing that should occur unmodified in temporal expressions is *za* + I 'behind'. There are two reasons why it should. First, *za* realizes LOC & PTH & PST in spatial expressions. It communicates a position on a line (PATH) posterior (PST) to the object, relative to some observer. This spatial geometry is perfectly compatible with temporal geometry. By the standards outlined above, the temporal usage should occur for this reason alone. Moreover, the preposition-case pairing *za* + A 'to behind' occurs in temporal expressions (P1977:131) with a usage predicted by its geometric characteristics. The pairing *za* + A realizes LOC & PTH & PST & GO. The occurrence of GO accounts for the accusative case. Otherwise, the two pairings are identical. In short, everything suggests that *za* + I should occur in temporal expressions.

Now a temporal analog to *za domom* 'behind the house' should be *za p'atju časami* 'after 5 o'clock'. But instead of the latter we get *posle p'ati časov* 'after five o'clock' with *posle* + G. This pairing communicates the posterior meaning in temporal expressions. But *posle* + G never occurs in spatial expressions. That is, *posle doma* is as impossible as *za p'atju časami*. What we have here is a perfect case of complementary distribution. PST is realized as *za* in spatial environments and as *posle* in temporal environments. Thus the geometric predictions are upheld, if with alternate forms.

In short, the negative predictions do not fail.

V. Summary and Conclusions

Forty-four preposition-case pairings that communicate spatial locus in Russian have been examined. These pairings are described in terms of Euclidean geometry. I propose the hypothesis that those which do not have temporal usages can be predicted on the basis of incompatibility between their geometric characteristics and the geometry of time in a Euclidean system.

Eighteen pairings were predicted not to have temporal usages on the basis of their geometric characteristics. None of those eighteen have temporal usages. This provides preliminary validation of the initial hypothesis.

In addition, three preposition-case pairings which lack temporal usages, according to standard

references, were also examined. These pairings were examined because their geometric characteristics predict that they should have temporal usages. They do not directly affect the initial hypothesis. But if their lack of temporal usages could be verified, it would detract from the validation of the initial hypothesis detailed above by providing a counter-example to a closely-related hypothesis, to wit: that those pairings which have geometric characteristics compatible with a Euclidean view of space should have temporal usages.

In fact, the lack of temporal usages could not be verified for any of the three pairings. One of them, *za* + I, is in complementary distribution with *posle* + G, which has no spatial usages. Thus *za* + I does not constitute a counter-example to the initial hypothesis. The other two pairings, *u* and *posredi*, differ minimally from pairings which have temporal usages. Moreover, a temporal usage of *posredi* has been observed. Though it has not been shown that these two can occur on a regular basis, they are not counter-examples to the hypothesis.

In short, the initial hypothesis is validated by the negative predictions, and the cogency of a Euclidean description of Russian locus expressions has been substantiated.

NOTES

¹This is an overstatement, but it will suffice for the present study.

²Other metaphors are, of course, possible. There are mathematically more complex models and culture-specific models which include the speaker's orientation toward future or past. Figure 2 will suffice for our needs.

³These are the logical possibilities. At this time I make no suggestions about the functions of real prepositions occurring in Russian or any other language.

⁴There is a restricted spatial sense which has a temporal parallel (P1977:141). This usage, like the restricted usages of *v* mentioned above, is predictable from the spatial description but beyond the scope of the present study.

⁵AD lists what they call a temporal usage in which the object of *protiv* is a time noun like *vtornik* 'Tuesday'. But the expression *protiv vtornika* means 'in spite of Tuesday' and is not an expression of temporal locus.

⁶The concept of inherent vs. relative geometry had to be developed in light of certain discrepancies in the distribution of some Russian locus prepositions. Some objects, e.g. a ball, have no inherent front or back. A front or back can be defined relative to an external observer, but there is no inherent front or back. Conversely, other objects, e.g. a house, have an inherent front, back, sides, etc. A geometry relative to an observer can also be defined. Thus *pered domom* can mean 'in front of the house (inherent geometry)' or 'before the house (= between the observer and the house: relative geometry)' but *pered sarom* can only mean 'between the observer and the ball' because balls lack the requisite inherent geometry.

⁷Expressions like *za zavtrakom* 'at breakfast' are often said to mean 'during breakfast'. These expressions are treated in Sullivan 1986, where I show that they are spatial expressions interpreted temporally because breakfast occurs at a fixed time.

⁸In fact, if the discrepancy represented by these three prepositions remains unexplained, I suggest that a better description be sought.

⁹Under restricted circumstances it is also possible to get the pairing *po* + L with the meaning 'after'. Although this pairing deserves discussion on its own merits, it is ignored here because it would only complicate the present discussion without changing the conclusion.

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IV

LEXIS AND SEMANTICS

IS THERE ANYTHING ELSE THAT NEED BE SAID ABOUT AUXILIARY NEED?

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In contemporary English there is a clear distinction between the catenative (or full-verb) and the auxiliary use of the verb need, the latter being characterized by all the traits which are typical of the modal auxiliaries. These are:

A. the absence of -s in the third person present indicative on the morphological level:

(1) No one need know about it.

B. on the level of syntax, direct negation by not:

(2) In other words, you were saying that they
need not pay up their arrears.

(Scheurweghs 1959:359)

C. inversion without use of auxiliary do in questions:

(3) "Need we think about it yet?" said Sam.
"Surely we are not going to move any more
today, if day it is."

(Tolkien 1968)

D. construction with the bare and not the to infinitive (as in all three sentences just given), and

E. use as a pro-form in tag questions of the type:

(4) She needn't leave, need she?

Various comments have been made on the distinction in meaning between auxiliary and catenative need. Bolinger (1942:63), for example, sees it in terms of "external constraint" versus "literal requirement or expression of lack within one's self": "The nonauxiliary calls for fulfilment of a personal want, the auxiliary for compliance with something external." The notion of personal want expressed by full verb need is illustrated by Does he need to see the doctor now?, which "implies a need for medical attention" (p. 63). The "something external" implied by the auxiliary is equated by Bolinger (p. 65) with an authority seen as a source of permission:

In what kind of sentences involving the idea of external compulsion would need fit most naturally? Obviously, those having a suggestion of permission, asked or given. Permission asked

gives us the second type, on the model of "Need I wait any longer?", which plainly asks for permission to go, or "Need it cost so much?", which calls for permission to pay less. Permission given results in the first and third types: "You needn't wait any longer" (i.e., "You are permitted to go"); "He need only sign his name" (i.e., he is permitted to dispense with the other requirements).

The same kind of contrast as that described by Bolinger is also felt by Leech (1971:96), who comments that while the auxiliary and the main verb need "scarcely differ in effect on many occasions" (cf. Need you wake him up?/Do you need to wake him up?), "in other contexts one can draw a clear distinction between them":

Let us suppose that Lady P. addresses her gardener with the words: The hedges needn't be trimmed this week Smithers. This means 'you are excused the task -- I shall not oblige you to trim the hedges this week' (perhaps because Lady P. is feeling kind, or because she has more important jobs in mind for Smithers). But the import is quite otherwise if she says: The hedges don't need to be trimmed this week, Smithers. The point she makes here is that the hedges do not require attention -- because, we presume, they have not grown enough to make them look untidy.

Joos (1964:192) compares two sentences similar to those of Leech -- You needn't wait and You don't need to wait -- on a similar basis: modal need "carries two social messages, either 'I'm indulgently excusing you' or 'I'm firmly dismissing you'", whereas the full verb "carries only technical messages", so that the sentence above means "your waiting is not technically requisite: the state of the factual world will be just as good if you don't wait."

An extremely important contribution to the study of full verb vs. auxiliary need is made by Jacobsson 1974. One of the interesting facts which he points out (p. 59) is that need to is sometimes practically the equivalent of have to, in which case Bolinger's definition of need to as evoking an internal requirement within the subject cannot apply since have to evokes an obligation stemming "from an external source, neither the subject nor the speaker or hearer" (Palmer 1974:122).¹ This often occurs when the subject of need refers not to a person but to a thing as in:

¹ cf also Palmer 1979:92, Coates 1983:57, Perkins 1983:62.

- (5) The slums need to be replaced by good housing.
(Jacobsson)
- (6) Mines need to be recognized as a major element in anti-submarine employment, extended to deep water, and have their effective area per unit increased.
(Brown University Corpus J71 1620 1)
- (7) ... emotional involvement is necessary; but involvement needs to be accompanied by a special frame of mind.
(Brown University Corpus G42 1770 4)

The only definition of full verb need which is applicable to all of its uses is therefore that of Joos, according to which need + to evokes a requirement imposed by the state of the factual world. The best paraphrase of need to is thus 'there is a need for the subject of need to perform the action or to be in the state denoted by the infinitive'.

Besides making clearer the meaning of full verb need, Jacobsson also brings to light a fact of the highest significance for understanding the meaning of the auxiliary: he shows that auxiliary need's occurrence is linked to a semantic factor, which he calls 'non-assertiveness':

The existence of the necessity or obligation is not asserted but denied, questioned, conceded (in concessive clauses), or represented as a mere conception rather than a positive fact ('subjunctive'). (...) If it is possible at all to find a semantic common denominator for sentences containing auxiliary need, the best candidate would probably be 'non-assertiveness'.

This semantic common denominator is observed in every one of the ten types of use identified by Jacobsson, and which I list below:

- (8) (a) Questions
 Need I be present?
- (b) Negation
 He needn't come.
- (c) Shifted negation
 There is nothing you need trouble about.
- (d) With semi-negatives hardly and scarcely
 I need hardly say how glad I am.

- (e) With "hidden negatives"
He need only state his opinion clearly.
All he need do is state his opinion clearly.
(='He needn't do more than...')
- (f) In comparative clauses
Standards are lower than they need be.
(='They need not be as low as they are'.)
- (g) After superlatives
His book covers most that need be said on the subject
(='There is little more that need be said on the subject'.)
- (h) In before - clauses
I have half an hour to spare before I need go.
(='I needn't go yet.')
- (i) With subjunctive force
It is embarrassing that such a truth need be stated at all.
(='Such a truth should not need to be stated at all.')
- (j) In concessive clauses
However much need be said, let it wait.
(='There is a great deal that needs to be said but it need not be said immediately'.)

While Jacobsson has most certainly put his finger on something significant here, he goes on to suggest that there is no difference in meaning between catenative and auxiliary need¹, and contends that "from a semantic point of view... there should be no obstacle to need being used as an auxiliary even in affirmative sentences" (p. 62). I intend to show on the contrary that there is a subtle but real distinction in meaning between the auxiliary and the full verb uses and thus to demonstrate that there is indeed an obstacle to need being used as an auxiliary in affirmative sentences. In so doing, I will also try to make clearer the semantic relation of auxiliary need to the core modals.

¹ "Catenative need seems always to be usable as a variant, sometimes with a slight change in meaning or emphasis. It is the only choice in truly affirmative statements in spite of the fact that in such statements the verb usually conveys the same general idea of necessity or obligation as it does in negative or subjunctive contexts." (p. 62)

I believe it is possible to push Jacobsson's observation that need is never assertive in its auxiliary use one step further by reflecting on the notion of 'need' itself and drawing some conclusions. One such conclusion is that a need is by definition a lack calling for future fulfilment, i.e. something whose existence is primarily known through imagining the consequences of not performing the action one suspects is needed: if one realizes that something essential would be missing if this action did not occur, then a need is perceived to exist. Seen in these terms, need auxiliary can be said to express the opposite situation in which someone (usually the speaker) does not feel obliged to conclude that something would be amiss if a given event were not to take place. In this case, all that is evoked is the mere possibility that a need might exist, there being no perception -- or at least no clear perception -- of its real existence. Since full verb need, unlike the auxiliary, can be used to assert the reality of the existence of a need, as in (5)-(7) above, this suggests the following semantic relation between the auxiliary and full verb uses:

(9) SENSE 1 Auxiliary use of <u>need</u>	SENSE 2 Full verb use of <u>need</u>
Mere possibility of existence of a need Need not (yet) perceived	Reality of existence of a need Need already perceived

To put it another way, auxiliary need signifies the absence of awareness of any factor or circumstance which would be weighty enough to make some event necessary: it always implies therefore that the existence of a need is not clear. In full verb use, on the other hand, it is possible to assert the existence of a need unequivocally, which explains why the full verb is the only form found in affirmative contexts.

The general notion expressed in auxiliary use that the existence of need or necessity is not clear takes on various forms according to the possible source of the need. When the speaker's will is the decisive factor for the existence of a need, this gives the impressions observed by Joos with regard to You needn't wait -- the speaker is either firmly dismissing or indulgently excusing the hearer (the idea of dispensation). In other cases, the effect is rather that no reason is seen why some event should occur, either absolutely:

(10) Need he ever know?

(Poutsma 1923:11)

or if some specific condition is met:

- (11) Embarrassed and tongue-tied! Poor fellow!
But it need not happen to you -- if you
plan your speech.
(Lancaster-Oslo/Bergen Corpus F03 147 9).

- (12) If we are careful, we need never cease to
be attractive.
(Poutsma 1923:17)

In a third type of sense effect, which has been called "epistemic" (Coates 1983:51), the impression is rather that logical reasoning does not make the truth of some statement appear necessary: as Palmer (1979:54) puts it, the speaker does not see something as being "the only possible conclusion." See in this respect:

- (13) He may be there, but he needn't be.
(Palmer, *ibid.*)

where need is used in conjunction with epistemic may.

With full verb need, in contrast to the auxiliary, the source of the need may be the entity referred to by the subject of need, as indicated by Perkins (1983:62):

NEED TO... indicates a compulsion which comes from within. If I 'need to' rest, I feel a compulsion which, although it may be non-personal and beyond my control, is still felt to be within myself. Similarly if we speak of a chair that 'needs to' be repaired or a watch that 'needs to' be wound, we are referring to states which we see as originating in, or as being properties of, a particular chain or a particular watch.

Alternatively, the source of the need may be the particular circumstances in which the entity referred to by the subject of need finds itself and which create (or do not create) a need with respect to this entity, as Jacobsson has shown for (5) above. In both cases however the source of the need is objective and circumscribable, which is not the case with the auxiliary use, where it is either subjective (in the dispensational and epistemic senses) or undefinable. Examples of undefinable need source are (10), (11) and (12), where what is in question is 'any reason whatsoever' -- in (11) and (12) with the proviso that the condition expressed by the if-clause must be fulfilled. This objective/subjective contrast is in perfect keeping moreover with the semantic relation diagrammed in (9). If the auxiliary use evokes merely the possibility of a need, i.e. a necessity whose existence is not clear to the speaker (or to someone else in some cases), then it is quite normal for the source of the need to be subjective or undefinable. If, on the other hand, what is dis-

cussed is a real need, then one would expect the source of the need to be objective and definable.¹

Given what has been discussed above, we are now in a position to understand how need can exhibit a double personality, behaving sometimes like a full verb and sometimes like a modal. Its primary status in English is still that of a full verb. This is seen in the fact that it can be used with a noun as its direct object, as in:

- (14) "I think Dalnadoire is a house which needs
a family of children," he said quietly.
(Lancaster-Oslo/Bergen Corpus P16 166 5)

Here it predicates of its subject a real need for what is denoted by the direct object, whether this need stems from within the subject itself as in (14) or is created by the circumstances impinging on the subject as in:

- (15) It only needs good will from both sides.
(Hornby et al 1974)

- (16) The phrase "consent of the governed" needs
a hard look. How do we define it?
(Brown University Corpus G17 0500 4)

- (17) The problem needs further exploration.
(Brown University Corpus J35 1060 8)

Since this is exactly what need expresses when it is followed by the to infinitive, the use with a noun object can be identified as involving sense 2 of the diagram in (9).

When it is conceived in sense 1, however, need becomes the semantic equivalent of a modal in that it does not then predicate a real need of its subject but rather something opposed to reality -- the mere possibility of a need. The modals also evoke notions which are all opposed to reality -- the ideas of possibility, probability, necessity, etc. (which can be summed up by the general term of potentiality). The difference between the two is that whereas the lexical content of the modals is by nature a potentiality, that of need is not, and can acquire this status

¹ This has been observed to be the case even in negative contexts, as witnessed by the comments of Joos and Leech quoted above. It also explains why He never needs to know would express a factual statement about someone who never requires certain knowledge while He need never know expresses the speaker's opinion that he can see no reason -- either now or in the future -- why the person referred to by he should find out about something.

only if one adopts the critical view of hesitating or refusing to see a need as really existing which is depicted in sense 1 of (9). Need is thus a full verb whose closeness to the semantic field of potentiality allows it to be conceived, not as evoking a real need existing in itself, but rather as a negative way of discussing necessity when it is used to evoke a need whose existence is represented as not being clearly perceivable.

Confirmation of this analysis is provided by the fact that a similar phenomenon is also found with the verb dare, as the latter never occurs with modal characteristics in purely assertive contexts. The subtle shift in viewpoint which allows need to function as a modal would thus seem to be at work with dare as well, but since space and time are lacking to investigate the matter at this point, we must leave it for another discussion. It is hoped at least that the reader has been convinced that there was in fact something else that needed to be said about auxiliary need.

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VOCABULARY DISTINCTION:
JUST A WORD ON *le mot juste*

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Vocabulary distinction in French for English-speaking students is rendered difficult because lexical items are approached as if there were a one to one correspondence between the lexicogrammars¹ of French and English. This is often not the case. In many instances, one has to take a bi-stratal (lexemic-sememic) or a tri-stratal (morphemic-lexemic-sememic)² approach to translate an English lexeme into its French equivalent and reach *le mot juste*. The vertical discontinuity in both language systems is not underscored enough. The horizontal discontinuity (divergences in lexical cohesions) of both lexemic systems is neglected also. This results in the production of a large number of inaccurate collocations in translation. In other words, both *le mot juste* and *l'expression juste* fail to be reached.

This paper will show that the subtle sememic and collocative discrepancies which occur in French/English vocabulary usage can be best observed through translation. The linguistic notions of aspect, semantic extension, value, bifurcation, polyfurcation, register of speech, collocation and lexicostylistic choices, in relation to French/English lexotactics, will be used to pinpoint the variations which exist in the lexicogrammars of French and English.

1.0 VARIATIONS IN FRENCH/ENGLISH LEXICOGRAMMAR DUE TO LEXICAL ASPECT

Even the most basic, everyday vocabulary of French and English is imbued with a certain sememic flavor which can be described as aspectual. If traditionally the notion of aspect has been used mainly as a category of the verb, it can be extended to the noun, the adjective and the adverb. Its presence or absence within these parts of speech will result in lexicogrammatical divergences between French and English and will necessitate different lexical choices in translation.

1.1 LEXICAL ASPECT AND THE VERB

Faced with the translation of the verb *to wear*, for instance, the student has the choice between *porter* and *se mettre*.

Examples: *I wore my blue suit today.*
J'ai porté mon complet bleu aujourd'hui.

She has nothing to wear
Elle n'a rien à se mettre.

The lexical variations in French and English stem from the fact that the lexicogrammar of French expresses lexemically the difference between the durative aspect (*porter*) and the inchoative aspect (*se mettre*), a fact which the lexicogrammar of English disregards.

The selection of *le mot juste* in translating the common verb *to speak* into French is also entangled in the polyaspectual value of the English verb. Indeed, *to speak* and *parler* translate each other only when they both possess the durative aspect.

Examples: *She speaks French.*
Elle parle français.

To translate the inception of the act of speech, which English continues to render by *to speak*, French must find other lexemes. Thus, *Your friend never speaks to me*, becomes *Ton ami ne m'adresse jamais la parole.*

Other examples: *Did you speak at the meeting?*
As-tu pris la parole à la réunion?

A woman spoke to me in the park.
Une femme s'est adressée à moi au parc.

When the French lexeme *parler* denotes the aspectual value of 'momentary' action, it must translate into *mention* in English.

Example: *Elle n'en a pas parlé.*
She did not mention it.

The verb *to sit* is inchoative sometimes in English. It must, then, be translated by *se mettre*.

Example: *Where do you want him to sit?*
Où voulez-vous qu'il se mette?

--*To sit* 'durative' is *être assis*.

Example: *I am sitting in front of the TV.*
Je suis assis(e) devant le téléviseur.

--*S'asseoir* 'inchoative' is *to sit down*.

Example: *When she got tired, she sat down.*
Quand elle s'est senti fatiguée, elle s'est assise.

The verb *to laugh* is another example of a lexeme which must be analyzed aspectually before *le mot juste* can be attained in French

translation. *Rire* translates *to laugh* when the action is viewed as enduring.

Example: *She likes to laugh.*
Elle aime rire.

When the action expressed by *to laugh* is instilled with the inchoative aspect, one must say *se mettre à rire*. This aspectual value which is lexemically covert in English has to be overtly represented in French by *se mettre à*.

Example: *When I saw him fall, I laughed.*
Quand je l'ai vu tomber, je me suis mis à rire.

In some cases, both in English and French, the inchoative aspect gets its realization at the morphemic level. The suffixes [-ir] in French and [-en] in English, are examples of the morphotactic treatment of the inchoative aspect.

Examples: *to redder/rougir* *to blacken/noircir*
to whiten/blanchir *to harden/durcir*
to ripen/mûrir *to deaden/amortir*

However, the "all grammars leak" saying applies to this paradigm also, and in many cases, the morphotactically realized inchoative aspect in French must be lexotactically realized in English, yielding diverse collocations.³

Examples: *to get narrower/se rétrécir*
to get more beautiful/s'embellir
to grow rich/s'ennrichir
to grow old/vieillir
to turn yellow/jaunir
to doze off/s'assoupir

The perfective aspect which is lexemically covert in French is overtly represented in English. In translating from French into English, one must account for this lexicogrammatical variation.

Examples: *souffler une bougie-to blow out a candle*
éteindre-to turn off the light
fondre le plomb-to melt down the lead

Translating *On l'a gardée* by *She was kept* instead of *She has been kept* will make a native speaker of English smile, to say the least.

1.2 LEXICAL ASPECT AND THE NOUN, THE ADVERB AND THE ADJECTIVE

Lexicological aspect must be considered if one is to use *le mot juste* in translating certain nouns, adverbs, and adjectives from English into French.

The lexemes *day*, *morning*, *evening* and *year* must be translated dif-

ferently according to the sememic presence or absence of the durative aspect in a given context. In this case, French lexicogrammar creates a well-defined dichotomy between *jour/journée*, *matin/matinée*, *soir/soirée* or *veillée*, *an/année*. The lexicogrammar of English does not make this distinction.

Examples:

What day is it today?
Quel jour sommes-nous aujourd'hui?

She spent the day in the country.
Elle a passé la journée à la campagne.

See you this evening!
A ce soir!

The evening seemed short.
La soirée/veillée a paru courte.

The maid comes in the morning.
La bonne vient le matin.

In the morning, she does not do much.
Elle ne fait pas grand chose en une matinée.

I am forty years old.
J'ai quarante ans.

I will spend the whole year in Paris.
Je passerai toute l'année à Paris.

Night and *time* are examples of polyaspectual lexemes. The word *night* is marked differently than *nuit* by the durative aspect. The duration covered by *night* is longer than the duration covered by *nuit*. Thus, *last night* may be translated either *hier soir* or *la nuit dernière*. *Cette nuit*, in its turn, is ambiguous since it does not differentiate between past and future. In English, however, *tonight* and *last night* express overtly the vectorial aspect of time.

Examples:

Did you go to the movies last night?
Es-tu allé(e) au cinéma hier soir?

Were you awakened by the thunderstorm last night?
Est-ce que l'orage t'a réveillé(e) la nuit dernière or cette nuit?

I hope you sleep well tonight.
J'espère que tu dormiras bien cette nuit.

The lexeme *time* contains a variety of lexical aspects which complicate its translation into French. A different lexeme must be used according to the aspectual value it possesses in a particu-

lar utterance. It creates a polyfurcation of lexical realizations.

Examples: ASPECT

specific: *What time is it? Quelle heure est-il?*

iterative: *How many times did you go to France?
Combien de fois es-tu allé(e) en France?*

durative: *She spends a lot of time in front of the mirror.
Elle passe beaucoup de temps devant le miroir.*

diachronic: *In the time of the Crusades...
A l'époque des Croisades...*

momentary: *At that time, she was sick.
A ce moment-là, elle était malade.*

The adverb *once* is also a polyaspectual lexeme which requires a variety of translations in French. When it denotes the iterative aspect, its French equivalent is *une fois*.

Example: *I saw him just once
Je l'ai vu une seule fois.*

If it carries the aspect of specificity, it must be rendered by the collocation *à un moment donné*.

Example: *Once, their father came in with a light...
A un moment donné, leur père entra une bougie à la main...*

The presence of the inchoative aspect in the lexeme *once* will lead to its translation into *dès que* in French.

Example: *Once you learn how to ride a bike, you never forget it.
Dès qu'on a appris à faire de la bicyclette, on ne l'oublie jamais.*

Finally, *once* may have the vectorial aspect of time past. Then, its translation is *autrefois/dans le temps*.

Example: *I knew him once.
Je l'ai connu autrefois.*

The adverb *never* is translated *ne...jamais* when both lexemes evoke the durative aspect.

Example: *He never studies.*
Il n'étudie jamais.

However, there are cases when *never* refers to an isolated occurrence and can be said to evoke the aspect of specificity. Different lexical realizations will then ensue in French.

Examples: *You never said thank-you.*
Tu ne t'es pas donné la peine de le remercier.

I never asked.
J'ai oublié de lui demander.

The adjective *early* leads to confusion in translation because its aspectual value is only specific while its most common French counterpart can be specific and habitual. This polyaspectual value of French *matinal* gives it more extension and leads to different lexical realizations in English.

Examples: *Ma femme est matinale.*
habitual: *My wife is an early riser.*

Vous êtes matinal aujourd'hui.
specific: *You are early today.*

2.0 VARIATIONS IN FRENCH/ENGLISH LEXICOGRAMMAR DUE TO HYPERSEMEMIC LACUNAE

Bréal (1964) reminds us that "language is a translation of reality, a transposition in which objects appear already generalized and classified by the work of thought." p.247. This process of translation of reality into lexemes is not parallel in French and English because the reality is not viewed the same way in both languages.

2.1 ABSENCE OF GENERIC LEXEMES IN ONE LANGUAGE

Thus it happens that because of a different "work of thought", a generic lexeme in English does not have an equivalent in French and vice-versa. If the generic lexeme does not exist, a specific lexeme must be used in each context to express a certain reality. The lexeme used collocates with the particular context. In such cases, one may speak of *contextual collocations*.

The word *bell* in English exemplifies this situation. It has a generic value in English. In French, its lexical equivalent collocates with each specific context.

<u>Generic Lexeme</u>	<u>Contextual Collocations</u>
English	French
bell	<i>cloche</i> (of a church)
	<i>clochette</i> (of a cow)
	<i>sonnette</i> (of a door)
	<i>grelot</i> (of a sleigh)
	<i>timbre</i> (on a desk)
	<i>glas</i> (to announce someone's death)

Bolinger (1975) describes this situation in the following words: "Language is not the only thing that moves. Sometimes it stands still, relatively speaking, and the world moves. This is the source of most collocations." p.419. An example in French is:

<u>Generic Lexeme</u>	<u>Contextual Collocations</u>
French	English
<i>luire</i>	<i>to glimmer</i> (dim on intermittent light)
	<i>to gleam</i> (subdued shine)
	<i>to glow</i> (bright, reddish shine)
	<i>to glisten</i> (to shine by reflection, wet surface)
	<i>to glint</i> (faint shine)

In those cases when reality is translated in a different fashion in French and English, the point of view is either synthetic, yielding a generic term, or analytic, requiring a different lexeme for each specific context. This dichotomy creates many lexemic polyfurcations between French and English.

2.2 CONCRETE AND ABSTRACT REALITY

Other differences in the carving of reality between French and English lead to variations in lexicogrammar, causing a lexemic bifurcation in one language or the other. For instance, the concrete and abstract realities may get the same realization in one language, but diverse realizations in the other.

Examples:

<u>concrete=abstract</u>	<u>concrete ≠ abstract</u>
<i>to span a valley-to span an era</i>	<i>enjamber une vallée-embrasser une période</i>
<i>to shelve books-to shelve a proposal</i>	<i>mettre des livres sur des rayons-écarter une proposition</i>

concrete = abstract
to convey people-to convey a
feeling

concrete ≠ abstract
assembler des gens-exprimer un
sentiment

concrete ≠ abstract
the ladder against the wall-
the salary scale

concrete = abstract
l'échelle contre le mur-
l'échelle des traitements

to marry someone-to espouse
a quarrel

épouser quelqu'un-épouser une
querelle

the 3rd floor landing-the
levelling off of a curve

le palier du 2^e étage-Le palier
d'une progression

3.0 VARIATIONS IN LEXICOGRAMMAR DUE TO A DISCONTINUITY IN SYNTAGMATIC LEXICAL COLLOCATIONS

The lexemes studied above stand in vertical collocations to the sememic reality (aspect) or to the hypersememic reality (context) as expressed by the French and English lexicon. The largest number of collocations are syntagmatic in nature or horizontal; i.e., they go hand in hand with the lexotactics of both languages.

In our quest for *l'expression juste*, it is important to realize that the same unit of thought, or sememe, in both languages, does not always get the same lexical realization. It can be monolexemic in one language and polylexemic in the other. Moreover, when the same parts of speech enter in collocation in French and English, their lexical realization may vary enormously.

3.1 MONOLEXEMES IN ENGLISH TRANSPOSED INTO POLYLEXEMIC EXPRESSIONS IN FRENCH

The following lexemes in English must receive a polylexemic representation in French because the equivalent monolexeme does not exist in the French lexicon.

<u>monolexeme</u>	<u>polylexemic expression</u>	<u>non-occurrence</u>
to volunteer	s'offrir comme volontaire	*volontairer
to tip	donner un pourboire	*pourboiner
to fine	punir d'une amende	*amender
orderly	en bon ordre	*ordrerment
unusual	peu commun	*unusuel

3.2 A NOUN REQUIRING A SPECIFIC VERB

Some variations in French/English lexicogrammar exist because the affinities between lexical items differ in both languages. The lexotactics behave in the same fashion, but the lexicogrammar does not.

Examples:

<i>to take a course</i>	<i>savoir un cours</i>
<i>to take an exam</i>	<i>subir un examen</i>
<i>to pass an exam</i>	<i>réussir à un examen</i>
<i>to write a paper</i>	<i>faire une dissertation</i>
<i>to ask a question</i>	<i>poser une question</i>

3.3 A NOUN REQUIRING A SPECIFIC ADJECTIVE

Besides the chiasmatic structure required by a difference in French/English lexotactics, *le mot juste* must also be selected to satisfy the strong affinity of the noun and its satellite adjective in both French and English. This creates collocations which are frozen in both languages in their lexemic composition.

Examples:

<i>complete silence</i>	<i>stubborn resistance</i>
<i>un silence profond</i>	<i>une résistance acharnée</i>
<i>good progress</i>	<i>a good friend</i>
<i>des progrès sensibles</i>	<i>un ami intime</i>

4.0 LEXICOSTYLISTIC CHOICES

The foreign students who fill their papers with the verbs *être*, *se trouver*, *il y a*, *avoir* and *faire* fail to select *le mot juste* for reasons which are not related to the lexicogrammar of French. Their failure is of a stylistic order. They make the "wrong" lexicostylistic choices in written expression. The register which is attained sounds false to the tutored native speaker. If "style involves a choice of form without a change in message",⁴ so does translation. For this reason, the translational approach seems appropriate to bring into light the lexicostylistic variations between French and English.

Two approaches can be taken: the purely lexotactic approach or the lexemic-sememic approach.

4.1 THE LEXOTACTIC APPROACH

For the sake of brevity, my discussion will be confined to some translational examples of the verb *to be*. "How are you?" is "Comment allez-vous?", and it is memorized as such. The lack of correspondence between the auxiliaries *être* and *to be* are also easily understood. There exist as well a very large number of occurrences when *être* is a possible lexical equivalent of *to be*. However, *être* and *to be* must very often be avoided as a lexicostylistic choice in order to achieve stylistic sophistication in French and English. Making students aware of this is not enough.

One must give them ways of avoiding the verb *être*; one way is the lexotactic transpositional approach.

Thus: English

French

1. be + preposition → an intransitive verb

The ducks are in the pond.

Les canards sont dans l'étang. literal translation

Les canards nagent (are swimming) dans l'étang. lexicostylistic choice

2. be + preposition → a reflexive verb

The house was in a beautiful garden.

La maison était dans un beau jardin. literal translation

La maison s'élevait (stood in) dans un beau jardin. lexicostylistic choice

3. be + preposition → a transitive verb

A cross is on a hill above the city.

Une croix est sur une colline au dessus de la ville. literal translation

D'une colline, une croix surplombe (overlooks) la ville. lexicostylistic choice

In the examples above, the verb *to be* has been lexotactically transposed into different grammatical categories realized by a lexicostylistic choice in French which is appropriate for each context and which addresses the right register of style.

4.2 THE BISTRATAL (LEXEMIC-SEMEMIC) APPROACH

Another way of reaching *le mot juste* in the translation of *to be* into French is the bistratal (lexemic-sememic) approach. It consists in the identification of the sememe of the verb *to be* in a particular context and in the use of this sememe as the lexemic realization of the verb *to be* in French.

If the verb *to be* contains the sememe 'remain', it is realized lexemically by *rester* or *demeurer* when applied to things.

Example: *The furniture will be dusty for a while.*
Les meubles resteront poussiéreux un certain temps.

If the verb *to be* carries the sememe 'to sojourn', it is translated by *séjourner*.

Example: *She was in Montréal when we met.*
Elle séjournait à Montréal lors de notre rencontre.

When *to be* denotes the sememe 'in the making', it is rendered by *se faire*.

Example: *There was a lot of noise at the ball game.*
Il se faisait un bruit inoui au match de baseball.

The verb *to be* meaning 'to make oneself' or 'to become' can be rendered by *se faire* or *devenir*.

Example: *In the presence of his father, he was very shy.*
Devant son père, il se faisait/devenait très timide.

Many more examples could be added to this list exemplifying the lexemic-sememic approach to the translation of *to be* by *le mot juste* in French.

5.0 CONCLUSION

In our native language, *le mot juste* and *l'expression juste*, in the case of collocations, idioms and lexicostylistic choices, become part of our lexicon through usage and experience. As Bolinger (1975) puts it, "It is our experience of expressions that are repeated over and over in given circumstances that makes for collocations." p.103.

In learning a foreign language, the circumstances for the repetition of expressions and words are not as readily available. The teacher must make sure that what cannot be assimilated through experience and usage is learned through the systematic presentation of the differences appearing in the lexicogrammars of the languages studied.

The teaching of vocabulary distinction, on a topicalized basis, through translation and compared stylistics, can best accomplish this task. We must not teach only grammar, we must teach lexicogrammar. Thus, the vocabulary acquisition and retention processes, both in the native and the foreign language, will be greatly enhanced.

NOTES

1. M.A.K. Halliday (1987) defines lexicogrammar in the following terms:
"In any instance of the context which serves as entry condition to that system - in grammatical terms, any instance of a finite clause - each term has an inherent probability of occurring. A speaker of English 'knows' these probabilities; having heard by the age of five, say, about half a million instances, he has a statistical profile of the lexicogrammar of the language." p.138.
2. For the morpheme-lexeme-sememe distribution and definition of these terms, see Lamb (1966).
3. Benson and Greaves (1973) define collocations as "the tendency of lexical items to occur regularly near each other." p.195.
4. Bolinger (1975) p.600.

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THE IMPACT OF ENGLISH BORROWINGS
ON JAPANESE LANGUAGE USAGE

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Introduction

The rate and extent of English language borrowings into the Japanese language over the last century have been studied to some extent by language scholars. Especially in the last four decades, the influx of words has grown and there are several indications that interesting effects are now being established in Japanese usage. What is of especial interest is that uses are appearing which are reminiscent of a similar situation much earlier in Japan's history. By the time of the Manyooshuu, the classic collection of Japanese poetry in 760 A.D., the Japanese were using Chinese and the Chinese writing system in their poetry in highly sophisticated ways. Nyozen Hasegawa, in his book THE JAPANESE CHARACTER: A CULTURAL PROFILE, addresses himself to the Japanese characteristic of receptivity to foreign influence at certain times in their history. At the time of the Meiji Restoration in 1867, after two and a half centuries of seclusion from the world, "the rapid taking-over of foreign culture was a practical necessity and in no sense a departure from a norm." (p. 4). Hasegawa presents the situation in Japan during the wholesale borrowing of many aspects of Chinese culture in the middle of the first millenium. His book, published in 1938 or well before the geometrical increase in borrowings from the West, has a statement which is directly relevant to the borrowing of English.

Although Japan's acquisition of a high level of culture in ancient times naturally involved all the changes in cultural forms consequent on the incursion of a continental civilization, yet even in the age of worship of things continental the nature of the indigenous culture enabled it, by the Heian period [794 A.D.] to emerge from the realm of imitation and create purely Japanese cultural forms, giving birth to a truly Japanese literature, art, and architecture. Japan since the Meiji Restoration has posed a new problem here, yet once again the real question is that of how Western civilization will be Nipponicized; one thing that seems certain is that Japan will not stop at out-and-out imitation of the West. (p. 35)

As shall be shown below, even as the Japanese borrowed heavily from the Chinese language and eventually used it in sophisticated ways of their own, so also have they borrowed from English and are developing serious sophisticated uses of it. In fact, the most complex examples involve Japanese, Chinese, and English.

Borrowing

The processes by which non-native words, syntax, and so on enter a society's language use and perhaps eventually become a part of essentially every speaker's competence are of especial interest to the sociolinguist. The non-native elements may be used by one component or stratum of a society and never spread. At the other extreme, non-native language elements may spread throughout the society to such a degree and with such persistence that they are acquired as part of the language system by the next generation of speakers. The study of on-going language borrowing necessarily involves sociological and psychological factors, among others. With access only to a finite number of speakers and a small percentage of the visual and aural media, the sociolinguist is almost always behind the actual level of borrowing and diffusion. Nevertheless, situations such as the impact of English on Japanese language use deserve a great deal of attention by language scholars. In this situation there is a good chance for the language scholar to study the on-going flux of Japanese language use as it incorporates various elements of English in several interesting ways.

Impact

Estimates of the number of English words used in Japanese conversation are as high as 5 percent. Estimates of the percentage of words in running conversation are as high as 11 percent. The loanword dictionaries in Japan have kept pace with the influx. In 1965 there were some 20,000 entries and in the 1987 edition of Sanseido's dictionary there were over 33,000 entries. The next edition could well top 40,000 entries involving primarily English, but also several other languages of the world. Much of the English borrowing has occurred since 1945 when the American presence in Japan began in such large numbers. English has been for some years studied by over 90 percent of Japanese students. In fact, within a few years the estimate is that some 90 percent of all Japanese will have studied English for six or more years. There are many special schools of English which help prepare for the college entrance examinations. The impact of English includes daily television fare, where bilingual programs are offered daily on Japanese channels. The pervasiveness can perhaps be symbolized by Japanese advertizers who use English phrases such as

Kanebo's 'For Beautiful Human Life'; even in advertizing Japan to the Japanese the Japan Railway Company may use English slogans such as: 'DISCOVER JAPAN.' Several studies of English loanwords have been made, so that this essay is necessarily based on those studies while adding a few of the most recent loans and treating a few of the interesting types of usages of English loans. The several treatments of phonological changes, semantic shifts, neologisms in English loans, cultural bases for pragmatic differences, and so on complement the basic typology presented here.

History

In early Japan, the influence of Chinese culture and language, especially in the 5th through 8th centuries, had a deep and lasting impact. The long history of that impact is well treated in the literature. Chinese elements entered all areas of the Japanese language and its use, including religious terminology, the language related to government and the emperor system, kinship terminology and so on. The Buddhistic elements were originally from India. In fact, not only are the names of many deities ultimately from Sanskrit, but also the organization of the Japanese syllabary. Some European influence did occur from the first contact with the Portuguese in 1542 until the closing of the country early in the 17th century. Then only the Dutch were allowed to trade with Japan for 250 years and Dutch became the language of Western learning. The early contacts left little impact on Japanese save for a few items such as Portuguese 'pan' for bread. The Meiji Emperor's Restoration in 1867, following Perry's 1853 mission to open Japan and the establishment of Townsend Harris as America's first minister to Japan, initiated a period of major borrowing. The Japanese saw English as the 'lingua franca' and began the process of emphasizing English. Since 1945, the influence of English has increased almost geometrically; for example, most Japanese students begin English lessons about the seventh year in school. Some 90% of Japanese students take 6 years of English language classes. The emphasis on English has undoubtedly created a climate which has fostered the use of English. As in most countries with a written tradition, this foreign influence has been periodically denounced as corrupting the language and culture. However, during the last four decades, 'purification' has become less and less an issue as the borrowings have increased to over 30,000.

Patterns of Loan Usage

The most frequently occurring type of use of English loans is a simple code-switch in which an English item is used instead of the native form. This type of usage is not listed here since it is

both commonplace and universal. The number and growing complexity of the usage of loans has not escaped the attention of the Japanese language scholars. The various uses of English loans have produced over the years various responses from the Japanese scholars. Some of the major items are given in the bibliography. The typology used below is primarily motivated by ease of presentation; secondarily, it is based on a perceived sequence of linguistic complexity. In other words, a simple one-word code-switch is easier to learn to use than is a two-language compound, which in turn is less difficult than an elaborate three language word play. The typology used here is not meant to be seen as a technical linguistic analysis. In the current state of flux in the borrowing situation, an attempted definitive linguistic analysis is not appropriate.

The seven patterns of English loan usage given below range from the simple to the complex. Acronyms and initials are in common use, including some not found in the the European languages. Many long English loans are abbreviated to a few syllables. A productive pattern is the combination of loanwords plus abbreviation, a process which is popular especially in the area of 'high tech' terminology. Japanese scholars use a special category of 'pseudoloan,' a loan which is composed of loans but is not itself a loan. A common type of loan usage involves a combination of abbreviated English plus Japanese. A growing type of usage is that of English loans given Japanese suffixes. The opposite situation also occurs: Japanese items with English morphology. The last type of usage treated below is that of sophisticated language play, in which the writer/speaker may use elements of several languages to create special verbal effects.

1. Acronym/Initials

The first type of abbreviation is found in many languages; the difference is that Japanese have borrowed 1000's of such items from the West. Such items as C&W, ABC, CBS, NBC and so on are in common use in Japanese publications. The 1987 edition of the loanword dictionary has almost 100 pages of this usage.

Other examples include forms which do not appear in English, such as NEC, or Nippon Electric Company, where the first initial is from a Japanese form. The Japanese have examples of English loans which they treat as initials. Other examples include J/biiĵii/ from 'B.G.' for 'business girls,' which is now more frequently J/ooeru/ from 'O.L.' for 'office lady.' J'DK' occurs in current house ads for 'dining-kitchen,' a Western-style organization of rooms. This form is now an official architectural term approved by the appropriate Ministry in Japan.

2. Abbreviation

The second of the seven types of borrowing patterns treated herein is abbreviation, which occurs in many languages, as a dropping of all syllables after the first two or three or, occasionally, four.

E'apartment'	J/apaatomeNto/	=	J/apaato/
E'building'	J/biru ^ŷ iNgu/	=	J/biru/
E'connection'	J/koneku ^ŷ oN/	=	J/kone/
E'cutlet'	J/katuretu/	=	J/katu/
E'inflation'	J/iNfuree ^ŷ oN /	=	J/infure/
E'sandwich'	J/saNdoi ^ŷ či/	=	J/saNdo/
E'television'	J/terebi ^ŷ oN/	=	J/terebi/

and so on. The use of these forms varies in frequency in various fields, types of newspapers and magazines, and so on. For example, in highly edited Japanese only high frequency items such as J/terebi/ (=E'television') and J/arumi/ (=E'aluminium') loan abbreviations are found. It is in ordinary conversation of a casual or colloquial style that a high frequency of these forms is found. In consultative or formal styles, especially in print, their frequency is lower.

3. Loans Compounded by Japanese Rules

The third type of English loan usage seems to be proliferating in the last few years, especially in the computer field and other high technology fields. The process is an old one in Japanese, resulting in well known examples such as "Toodai" from "Too(kyoo) Dai(gaku)" or "Tokyo University."

Examples from the last several years are:

eN suto	en(gine) st(op)
katu saNdo	cut(let) sand(wich)
puro resu	pro(fessional) wres(tling)
suta ha ^ŷ či	Star(sky) & Hutch [TV series]
hyu tekku	hu(man) tech(nology)
ofu koN	of(fice) com(puter)
waa puro	wo(rd) pro(cessor)
paso koN	per(sonal) com(puter)
famikoN	fami(ly) com(puter)

4. Pseudoloans

Akira Miura has a category of loan usage which involves English words and phrases used in new combinations. These pseudo-loanwords may or may not be understandable to the native English speaker. His examples include:

J/waN maN kaa/ literally 'one-man car'

J/waN maN basu/ 'one-man bus'

refers to a car or bus in which the driver must collect the fares rather than having a 'conductor' or 'ticket-taker.'

J/naitaa/ literally 'nighter'

refers to a night baseball game.

J/furu-muuN/ literally 'full moon' is, by analogy to

'honeymoon', a journey by a long-married couple (as in 'second honeymoon'); also, J/furu/ = 'old' so that the form functions in both languages.

This type of example is proliferating in Japan as the use of English loans spreads to all areas of society.

5. English and Japanese Compounds

A fifth type of loan usage involves English loans and Japanese vocabulary. Combining loans and native words is one of the most popular practices in the current use of the Japanese language. A few current examples of this kind are combinations coined to distinguish the types of Japanese students in terms of their cultural and cognitive behavioral patterns on the campus of the International Christian University in Tokyo, the most multiethnic institution of higher education in Japan:

J/heN ĵapa/ from J/heN(na)/ = E'strange' + E'Japanese'

J/haN ĵapa/ from J/haN(buN)/ = E 'half' + E'Japanese'

J/hoN ĵapa/ from J/hoN(to-no)/ = E 'real' + E'Japanese'

Another example found is one written in kanji (Chinese symbols) plus katakana (the syllabary used for foreign words):

J/haburaši/ = E'toothbrush' (i.e. J/ha/ = E'tooth' plus J/buraši/ = E'brush').

6a. English Loans with Japanese Morphology

The sixth type of loan usage involves the first steps in the integration of English loans into the inflectional system of Japanese. Chinese remains, in the consciousness of the speaker, distinct since the earlier Chinese loans are still written in Chinese characters. The situation is becoming more complex as English words begin to be written with Chinese symbols. For example, 'coffee' is now commonly written in Chinese characters. The integration of English loanwords into the Japanese grammatical system, as exemplified above in terms of derivational morphology, is further evidenced by English loans

being treated as regular Japanese verbs, as in J/memoru/ from E'memorandum' + the verbal ending J/-ru/ and J/demoru/ from E'demonstration' + J/-ru/. These forms are already in the 1987 edition of the loanword dictionary. These English loans are themselves inflected, rather than having the verbalizer J/suru/ suffixed to an English noun.

Not only have English loans such as these entered into the morphological system of Japanese verbs, but also loans are entering the adjectival system. For example, the adjective E'now' as in 'the now generation' is used with the Japanese adjectival ending J/-i/, as in J/naui/, and may be used with the past tense or any other adjectival inflection.

6b. Japanese Words with English Morphology

Recent examples illustrate a somewhat different effect of English on Japanese usage. Japanese frequently use a doubled onomatopoeic form as in ['the rain falls' +] J/zaazaa/, which indicates a rather heavy rainfall. Within the last few years, more and more examples are found, especially among the young, of the addition of E/li/ = E'-ly' to these forms, as in J/sorosoro/ + E/li/ = J/sorosorori/ = E'leisurely-ly'. Another example is J/šimišimiri/ = E'keenly-ly' or 'heartily-ly'.

In terms of grammatical impact, an equally important change seems to be occurring using Japanese elements only. The young have begun adding J/ni/ to 'adverbial' forms which historically do not have them, as in J/hayaku/ (= E'quickly') + J/ni/. The result is a form which has the force of E'quickly-ly'. Another example is J/hoNtoo/ (= E'assuredly') + J/ni/ = E'assuredly-ly'. Japanese linguists suggest that it is probably the analogy to English adverbs with E'ly' that is causing the change.

7. Creative Word Play

The last type of loan usage treated here recalls the time when Chinese was introduced to Japan. The early poets made use of the graphics of the written symbols, the sounds of the Chinese forms, and the sound of the native words to produce poetry which could carry two or more messages at once. At times the messages reinforced each other; at other times they were distinct; at other times they contrasted with each other. Their creative uses of the possibilities of the language diversity were quite advanced. In the situation in Japan today the richness is even greater as English, French and many other languages have contributed vocabulary. The situation is interesting as an example of the advanced state of borrowing. The examples here are limited to three rather well known ones.

The first example is a slogan used by Japan Railways to discourage smoking. Their sign reads J/getuyoobi-wa suwanai-dee/.

(J/getuyoobi/ = E'Monday'; J/wa/ = topic marker; J/suwanai/ = E'smoke' + negation.) In this slogan, /dee/ has two possible interpretations, as the English loan 'day' or as a Japanese particle conveying request in the casual style. In formal style the form J/de/ has the short post-consonantal vowel followed by J/kudasai/ = E'please.' In casual style J/de + kudasai/ can become J/dee/. In the first interpretation, the sentence is read as 'Monday, a day of not smoking' and in the second as 'Please do not smoke on Monday.' The two messages reinforce each other in an interesting way.

An example that is perhaps more significant in the development of the borrowing practice is 'This  Map' (E'This' + J/izu/ + E'map'). A few years ago the Japan National Railways used this slogan to promote tourism in the Izu Peninsula west of Tokyo. In this phrase, 'I-Zu' (two Chinese characters) is homophonous with the Japanese pronunciation of E'is' and is to mean 'This is a map of Izu.' The Subject-Object-Verb pattern of Japanese is not evident here. The English grammatical pattern is becoming the object of borrowing in this case. The absence of an appropriate article in this example may seem to indicate that grammatical borrowing has not been perfectly achieved, yet the final J/u/ of 'Izu' may be interpreted as the article E'a' by an English-speaking listener.

A written example which uses both Chinese and English is the following:

友	&	愛
J/yuu/	E'and'	J'ai/
E'friend'	+ 'and'	+ 'love, friendship'

The Japanese pronunciation of the sequence is homophonous with the English "You and I" and the meanings of the first item and those of the last are reinforced. The Chinese reading ("on" reading) and the English (which is homophonous but has a different meaning, a situation which may be called the "en" or "English" reading) reinforce the idea of 'you' as the speaker's 'friend,' the "on" 'friendship/love/like' and the "en" 'I' integrate both meanings into the composite message of close friendship.

As of 1989 in Japan, creativity had reached the graphics in this form. The lower right part of the first symbol has a small valentine heart as a replacement. The company also has some signs where the lines which join at the bottom extend a short distance so that the shape is more similar to the original Chinese symbol.

In these examples and the many more which occur in contemporary Japan, some of the real interest for the reader lies in looking for such entertaining creative uses of language and in deciphering them. Examples involve not only Japanese, Chinese, and English, but also French, German, and so on. It is important for the language scholar to recognize that these creative uses of English loans signal one of the major late stages in the borrowing process. In many ways, as will be noted in the concluding section, the situation is similar to that of the impact of Chinese

borrowings by the end of the Nara period (794 A.D.).

In terms of a potential for grammatical borrowing, only one productive pattern is rather common: the imperative construction. One form is the 'Be + Complement,' as in 'Be Sairento' (silent). The other is the 'Verb + Object' construction as seen in J/sutoppu za inFure/ = E'Stop the inflation.' Careful observation of the constantly changing situation may contribute a great deal to the knowledge of the late stages of wholesale language borrowing. This is one of the factors that makes the study of English loans in Japanese one of the most interesting current topics in the exploration of language sciences.

In Conclusion

In Miller's book on the Japanese language, he shows how the early poets used the resources at their disposal to produce various language structures of two intended meanings. He also shows how some 1000 years later the great dramatist Chikamatsu -- the Shakespeare of Japan -- used even more complicated structures; for example, he used phrases as long as 14 syllables which could be read in as many as three ways, each of which fit the drama. While the level of sophistication of English loanword usage has not reached the level of Chikamatsu, it may be compared to the level achieved in the first few centuries of Chinese influence. For example, English loans are used in Japanese poetry, including the traditional haiku, in great numbers. The movie and TV dramas, which after all reflect daily life, use them as naturally as does the population at large. It would not be surprising to see the creative uses become even more sophisticated over time.

It is possible to see the large influx of English and the development of uses as a sort of fulfillment of the Hasegawa prediction suggested above. In the terms addressed here, Hasegawa suggested that, after the period of borrowing English vocabulary, Japan would 'Nipponicize' that which it borrowed. As noted, the most sophisticated use of English loans has at least some similarities to the level of usage of the Nara period. Given that it took a century of further development to reach the level of Chikamatsu, it would be rather rash to make any specific predictions about the future of English word play in Japanese. In general, it would be safe to predict that the 'Nipponicization' of English loans to even higher levels of complexity will continue. The historical sociolinguist has the fascinating task of studying this rapidly changing borrowing situation and comparing it with the similar situation a millenium and a half ago.

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AN INDOEUROPEAN SOLUTION TO PROBLEMS
IN PROTO-TURKIC RECONSTRUCTION

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This paper attempts to solve some of the issues raised in Gerhard Doerfer's article (1975), Proto-Turkic: Reconstruction Problems. Although Indoeuropean borrowings in Proto-Turkic (PT) are by no means a panacea, they do shed new light on the development of this proto-language. Issues addressed here are: 1.) the phonemic status of *p versus *h, 2.) vowel length, 3.) Common Turkic (CT) *q and its Chuvash counterparts /y/ and /x/. For reason of space, Indoeuropean evidence for PT *z and *š cannot be treated here because the literature on the problem itself is quite voluminous. Therefore, this problem must be passed over in silence, though it is implicit in the evidence presented regarding other proto-phonemes.

Clauson (1962.15) supposed that "...the Turks must have had contacts with neighboring peoples at a very early date, certainly preceding their contacts with the Mongols. It can hardly be denied that öküz 'ox' ...is a loan word from some Indo-European language, probably taken from okso 'ox' in 'Tocharian B', the language which was still current in Kucha in the second half of the first millenium A.D." In fact, the above etymology was included in the appendix to Windekens' comparative dictionary of Tocharian (1941) along with Ottoman Turkish gün 'sun, day' which is thought to be a loan from Toch.A. konyi 'sun'. Winter (1963.247-8) believes this borrowing to involve cultural transmission of sun-god worship, and he concludes that contacts must have occurred "at a date close to the beginning of the Christian era." Moreover, Heine-Geldern (1951.249) concluded that the Tocharians reached Chinese Turkestan by 2,000 B.C., according to archaeological evidence. Yet actual documentation of Turco-Tocharian contacts dates from the tenth century (see Bailey 1939, 1949, Hovdhaugen 1971), that is the Old Turkic period. To complicate the matter, it has been suggested that some Tocharian elements in the Turkic languages were transmitted through the written rather than the spoken

medium because of the prestige of Tocharian B as a religious language (Winter 1963.250n18).

Great progress in the investigation of Turco-Tocharian contacts was achieved by the Hungarian Turcologist András Róna-Tas (1974) who collected some thirty-six Tocharian loans in proto-Turkic. However, in eight cases he has reconstructed a Tocharian word in order to explain the resemblance between the proto-Turkic and proto-Indoeuropean words. For these, I looked to Indic and Iranian languages to find an attested word which might be attributed to borrowing. The table below summarizes my emendations. Tocharian words with an asterisk are reconstructed by Róna-Tas, being unattested. Although most of the proto-Turkic words analyzed by Róna-Tas show greater correspondence to Tocharian B forms, the author proposes that borrowing involved proto-Tocharian (both A and B dialects). Because his proto-Tocharian forms differ little from the B forms, and because of prestige of the B dialect mentioned earlier, I list only this dialect for the attested forms.

Alternatives to Róna-Tas' Tocharian loan-words (1974)

proto-Turkic	Tocharian	other
(5) *bil- 'wissen'	päl.s.k- 'denken'	Saka pir- 'believe'; Sogdian pyl'k- id.
(8) *hōt 'Feuer'	*hōt id.	Avest. ātar id.
(14) *kert- 'schneiden'	*kär.st- id.	Avest. keret- id.
(15) *kīś 'Zobel'	*kīś 'Wiesel'	Skt. kaśa id.
(24) *qāz 'Gans'	*kās id.	Skt. hansa- id.
(26) *qomursqa, 'qormusqa 'Ameise'	*kurmis 'Wurm, Made'	Avest. kerema- id.

(note: Saka and Sogd. from Bailey 1979, Avest. and Skt. from Buck 1944.)

Róna-Tas' 1974 article is not included in the vast amount of Turcological literature which Doerfer (1975) critiques in a survey of issues and problems in proto-Turkic reconstruction. According to Doerfer (1975.3), the sources for proto-Turkic reconstruction are: internal reconstruction, Mongolian and Tungusic parallels, dialect information (i.e. modern Turkic languages), Turkic loan-words in Hungarian, Old Turkic texts. Let us now see how Indoeuropean borrowings in proto-Turkic directly affect our understanding of this linguistic stage.

Proto-Turkic and proto-Altaic initial *p are reconstructed on the basis of Turkic and Mongolian /h, ø, / and Manchu /f/. For example, Mongol ükür, üker 'Rindvieh, Ochs', Evenki hukur id., Uigur öküz id., Chuvash vāgār id. (Ramstedt 1957.54) give proto-Altaic *pökür id. Räsänen (1969.370) reconstructs PT *(h)ökür 'Ochs'. Róna-Tas (1974.502) explains PT *höküz, *höqüz 'Ochse, Rind' by Tocharian B. okso id. and proto-Toch. *hokso id. Whether or not the initial segment is primary in proto-

Turkic is less important than the fact that initial /h/ in the modern Turkic languages goes back to two proto-phonemes, *h and *p. The parenthesis around the initial segment in Räsänen's reconstruction is a reminder that the existence of the proto-phoneme is a moot question in Turcology. Ramstedt (1957) does not reconstruct it for proto-Altaic.

Tocharian AB pärsk 'to fear', *pärk 'to frighten' (Poucha 1955.174-5; Windekens 1979.16) are positive evidence of PT *p, so that PT *(h)ürk 'to fear' (Räsänen 1969.522) should be *pürk, a fact corroborated by the Tungusic data unlike the previous example, c.f. Chagatay hürük 'to fear', Middle Turkic ürk id., Middle Mongolian hürgü 'erschrecken', Manchu fuče- 'to be angry', Olcha puču- id., Evenki hurke- id. From other Mongolian loan-words in Manchu and Olcha, we know that the clusters -rk- and -rg- became fricatives; the Evenki word must be a recent borrowing because it retains the cluster (see Tsintsius 1949.236). Doerfer (1971.164) reconstructs PT *pürk- 'to fear' without the evidence from Tocharian, but he also rejects the existence of PT *h as a separate phoneme from *p.

Because Róna-Tas (1974) collected at least three examples where PT *b corresponds to Toch. /p/, the change *p > *h/#__ must have occurred at the proto-Turkic stage. Thereafter, Tocharian words with initial /p/ were interpreted as PT *b, e.g. PT *bēs 'five' Toch.B. piś id. < PIE *penkwe (Róna-Tas 1974.502).

Ramstedt (1957.164) believed proto-Turkic to have a primary phonemic distinction of long and short vowels, but also secondary long vowels. Shcherbak (1970.47-59) suggests a stressed-unstressed vocalic distinction instead of long-short. Doerfer (1975.13) proposes three vowel quantities for proto-Turkic (short, half-long, and long), a theory which few people other than his students accept.

The unattested Toch. *hōt 'Feuer' and Avestan ātar id. correspond to PT *hōt id. in terms of vowel quantity. Also Toch. AB āti 'Gras' < PIE *ados 'Getreideart' corresponds to PT *ōt 'Gras' (Róna-Tas 1974.503). To these I propose PT *tōz 'birch-tree' (Räsänen 1969.491-2) < Toch. *tod-dor 'tree, wood' or Avestan dāuru- 'wood' < PIE *dōru 'tree' (Pokorny 1959.214-17, Buck 1949.49). We should also consider Mongolian duru-sun 'shell, bark, birch bark' (Räsänen 1969.491) for its unmistakable correspondence to the Indoeuropean forms above.

What Róna-Tas (1974.504) calls proto-Turkic *tör(e) 'Ehrenplatz', *söl 'links' would provide good evidence to support the theory that proto-Turkic vowel length is primary, c.f. PToch *tuere 'Tür', and *sual 'links', except that Räsänen (1969.494-426) says that these are Middle Turkic words. However, PT *tört 'four' (Räsänen 1969.495) PToch. *stuer 'four' (Räsänen 1969.504) causes us to ask a new question about the correspondence between proto-Turkic and Tocharian diphthongs when we consider Yakut tüört 'four' and Chuvash tavaḍ id.: do the Yakut and Chuvash forms reflect a proto-Turkic diphthong, and is so is *tört only the Common-Turkic form? Together Common Turkic and Chuvash constitute the first two nodes of the proto-

Turkic tree. Whereas Yakut provides information about the CT stage, the linguistic isolation of Yakut from other Turkic languages also involves non-Turkic linguistic influences. Unless both Yakut and Chuvash both underwent diphthongization of long vowels, we need to emend the proto-Turkic form to *tüwert 'four' or something similar with a diphthong.

Doerfer (1975.23) asks, "Why do we find CT qân 'blood' Ch(uvash) yun, but CT qâz 'goose' Ch. xur? Which are the special tendencies?" Whereas PT *qâz 'goose' is unmistakably of Indoeuropean origin, we may explain CT *qân 'blood' (Middle Tk. according to Räsänen 1969.230) by either New Persian xûn 'blood' < PIE *wes- 'wet' or Saka hūnā 'blood' (Bailey 1979.490). The discrepancy between the Common Turkic and Chuvash forms may once again indicate imprecision in the PT reconstructions. Supposing that the two words in question come from Indoeuropean sources, we must take into account the possibility of different kinds of velars in both the borrowings and in the PT phonemic inventory. Chuvash yun 'blood' and the Iranian forms suggest a voiceless laryngeal fricative *h. The Chuvash voiceless dorso-velar fricative /x/ and CT *q suggest either a voiceless dorso-velar or *x or dorso-uvular*~~x~~ for proto-Turkic. PT *h and *x may have merged at the CT stage to give *q. In order for this theory to hold water, we must also suppose that the *h which originated from *p had phonetic qualities to prevent it from participating in the merger, perhaps being like English "h" which is described as a murmur. It should also be noted that Chuvash /u/ is the expected reflex of *a. Yakut xān 'Blut' (Räsänen 1969.230) would seem to retain primary vowel length and correspond well to the Iranian words for blood.

In conclusion, we have historical and archaeological evidence of contacts between Turkic and Indoeuropean peoples in the tenth century. This and other preliminary researches suggest that the Indoeuropean peoples with whom the Turks were in contact spoke Tocharian and Iranian languages. Comparison of certain proto-Turkic reconstructions with words attested in Tocharian, Avestan, Saka, and Sogdian indicate prehistoric contacts. Those proto-Turkic forms which may be explained as the development of the Turkic languages. Furthermore, the Indoeuropean evidence causes us to rethink some of our proto-Turkic reconstructions which contain discrepancies. Some of the new issues raised here are: 1.) two PT sources for CT *h, 2.) the existence of diphthongs at the PT stage, and 3.) the possibility or a phonemic merger of two phonemically distinct PT velar fricatives at the CT stage.

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ADVLTER(A) 'THE OTHER (WO)MAN':
CLARIFYING A TROUBLED LATIN ETYMOLOGY

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If we can take a fresh, unprejudiced look at the etymology of the Latin noun *adulter* and its feminine *adultera*, disregarding all our predecessors, it seems not only simple and regular phonetically but straightforward semantically. It consists of the base *alter*, which means 'other' or 'second', reinforced by the prefix *ad-* in the sense of 'besides' or 'too'.¹ So *adulter* would have been coined to express 'another one too' -- i.e. after the husband.²

The phonetic shift in the vowel of the root -- *alter* but *adulter* -- has never caused any difficulty. This is quite parallel to pairs such as *salsus* 'salty, witty' and its opposite *insulsus*. And since the rise of historical and comparative linguistics, the reduction of the vowel from wide-open [a] to closed [u] is explained well enough by evidence that in early Latin the first syllable of every word was stressed, and the subsequent syllable exposed thereby to weakening under certain conditions. If followed by the consonant *l* and then a different consonant, the vowel would come out *u*.³

Festus, around A.D. 200, was the author of the earliest etymological remark on record about *adulter*. He perceived a connection to *alter* but misstated the semantic aspect of the connection: *Adulter et adultera dicuntur quod ille ad alteram et haec ad alterum se conferunt* 'The adulterer and the adulteress are so called because they betake themselves, he to another woman and she to another man.' The implication is that the *adulter* already has a wife; but clearly that is beside the point. What makes him an *adulter* is that the woman already has a husband; it does not matter whether the *adulter* himself is married.

The derived feminine *adultera*, mentioned less often in the extant texts, is either the accomplice of the *adulter* or a woman who seduces a married man.⁴ The statement of Festus fits the former case; but even so, Latin word-formation gives no parallel to confirm his transparent etymological reasoning, that she is called *adultera* because she betakes herself *ad alterum*. Compound words with a prefix such as *ad-* do not go back to such a prepositional phrase construed with a verb.⁵ The great bulk of *ad-* words are verbs and their participles, or other secondary derivatives from verbs; e.g. *admittō* compounded from the simple verb *mittō* 'I send' or 'I let go' -- its perfect passive participle is *admissus*, and there is further a noun *admissiō*, the meaning of which has been taken over into English with the borrowed word *admission*.

Accordingly, both of the standard etymological works diagnose *adulter* as formed not directly from the adjective *alter* by prefixing *ad-*, but as a back-formation from the verb *adulterō*. To get from *alter* to *adulterō*, Ernout and Meillet, *Dictionnaire étymologique de la langue latine* (s.v. *alius*), cite the verb *alterō* -- which we will easily recognise as the source of our English verb *alter*. But in Latin this verb is first attested in the medical writer Caelius Aurelianus, who is thought to have lived in the fifth century of the Christian era.⁶ Now Ernout and Meillet might, if challenged, have discounted as merely accidental the non-occurrence of any form of the verb within our huge corpus of millions and millions of words, covering all the centuries of pre-classical and classical Latin. But that would be a weak argument; for the adjective *alter* is one of the commonest in the language, being found many thousands of times, and the noun *adulter* is frequent too in any appropriate context,⁷ while the verb *adulterō* is sprinkled occasionally through the generations, from Cato on.

The other authority, Walde-Hofmann, *Lateinisches etymologisches Wörterbuch* (s.v. *adulter*), differs from Ernout-Meillet in not mentioning *alterō*, which -- for the pre-classical and classical period from which *alter*, *adulter*, and *adulterō* are known -- is at best a purely hypothetical link between *alter* and *adulterō*. But Walde-Hofmann and Ernout-Meillet otherwise agree: from *alter* to *adulter* by way of *adulterō*. Walde-Hofmann quotes Festus, but points out -- in the interest of accuracy -- that Festus ought to have said *ad alterius uxorem* 'to another's wife', not *ad alteram* 'to another woman'.

One scholar, A.-C. Juret, in a brief note,⁸ has asserted a direct derivation of *adulter* from *ad+alter* "qui en a un (une) deuxième en plus". He likens this compound to the adjectives *praeceps* 'head first' and *deplūmis* 'moulted'. Walde-Hofmann judged Juret's etymology in one word "Falsch". A valid objection that I see is to the "qui a" -- i.e. 'having' -- which Juret supplies. It suffers from the same semantic flaw as we detected in Festus: The *adulter* is hardly the one who has *another woman besides* his wife; he is *another man besides* the woman's husband.

Still we are indebted to Juret for propounding the "simpler and more natural" derivation (as he called it), rejecting the clumsy notion of a back-formation by way of the verb *adulterō*. There are a few definitely non-verbal compounds with *ad-*, and more with certain analogous prefixes, especially *com-* (*con-*, *co-*) and *per-*. The most pertinent parallels are *affinis* morphologically, *compār* and *cohērēs* semantically. The adjective *affinis* (also found with the etymological spelling *adfinis*) is formed unmistakably from the noun *fīnis* 'border, boundary'. This adjective has the primary sense 'bordering, neighboring', based on the phrase *ad fīnem* 'at the boundary',⁹ which has *ad* functioning as a preposition with the accusative case but which could easily be construed as one word when it accompanies a noun in the accusative, such as *agrum ad fīnem* 'a field on the border' *agrum adfinem* (*af-fīnem*) 'a neighboring field'.¹⁰ No one supposes *affinis* to be a

back-formation; for although there is a denominative verb *fīnīō*, it has no compound **affīnīō* in any period.

In *adulter* the prefix *ad-* functions differently from the *ad-* in *adfinis/affinis*, but much like *co-* in *cohēres*, which has passed into English as *co-heir* (though it is more usual to say *a joint heir*).¹¹ *Ad-* in *adulter* and *co-* in *cohēres* add a nuance to the base *alter*, *hērēs*: 'another besides (the husband)', 'an heir together with (so-and-so)'. In the compound adjective *compār*, the meaning of *pār* 'equal' seems merely reinforced by the prefix but not perceptibly modified. On the analogy of *compār* and *cohēres*, *adulter* would be semantically just a special use of its base 'another' or 'the other', while morphologically a direct derivative from *alter*.¹²

Latin has neither an indefinite nor a definite article; but it has masculine and feminine gender (as well as neuter). An adjective or a noun of this declension, or inflectional pattern, is masculine when unsuffixed; so *adulter* is 'another man' or 'the other man', and *adultera* with the feminine suffix is 'another woman' or 'the other woman'. The Latin compound is used only in a certain family context; otherwise it is *alter*, as in *alter non esset electus* 'another man would not have been chosen' (Trebellius, Valerian 5.2, not *adulter*; cf. Ovid, *Metamorphoses* 1.293),

*nec tibi par usquam Phrygia nec solis ab ortu
inter formosas altera nomen habet*

'nowhere in Phrygia nor the Orient has another woman a name equal to you among the beauties' (Ovid, *Heroides* 16.143-144 [Paris to Helen], not *adultera*).¹³

In that special context, where Latin has the compound *adulter* (masculine) or *adultera* (feminine), English uses just the same simple word as elsewhere: *There's another man* or *There's another woman*; more often with the definite article, *the other man*, *the other woman*. So utterly ordinary in form are these combinations that they went unnoticed in the *Oxford English Dictionary*. The Supplement published in 1982, however, cites some instances from the nineteenth century, well before the volume of the *OED* with the letter O- came out, and of course from the twentieth century.¹⁴

In my own experience, I remember hearing my mother and my aunts, many years ago, talking about "the other woman" in strained or broken marriages. I also remember "She ran away with another man" (which in Latin would be *cum adulterō*), but not "the other man", with the definite article; and my German informants¹⁵ similarly are familiar with *die andre Frau* but not *der andre Mann*. But a short story by Rudyard Kipling is entitled "The Other Man";¹⁶ and the representative citations from the *OED* Supplement suggest that both *the other man* and *the other woman* have had considerable currency, whereas the omission from the original *OED* suggests it was not so extensive as to reach into virtually everyone's vocabulary.

Some particular motive seems to evoke this sort of expression. It appears to be quite unknown in French;¹⁷ otherwise my explanation might well have occurred to Juret. Although the *OED* Supplement cites *the other man*, *the other guy*, *the other woman* from

1946, 1953, 1966, 1973, and 1975, my personal recollection for my adult years is blank until just recently, when a television special on the subject of adultery was entitled "The Other Man, the Other Woman".

Many of the passages cited in the *OED* Supplement have "the other man" or "the other woman" in quotation marks; and that punctuation is the best clue to the motive for resorting to these deceptively simple phrases. But first it would be good to determine, if possible, the motive of the writers for using quotation marks. Who was being quoted? The quotation marks signify *the other man, as he is called; the other woman, as she is called*. The writers were not quite at ease with it: there ought to have been a more precise term, but for some reason people would shrink from saying it.

What gives the edge to *the other man*, or *the other woman*, is its direct focus on the only thing that matters. Just as a wronged husband or wife does not care what the rival's name is, neither do they care about any individual qualities, nor about the particular sentiments that have brought the illicit pair together. Yet I surmise that *the other man* or *the other woman* is used even more by those speaking sympathetically to the jilted one. So it amounts to a sort of euphemism, disclosing the fact, but somewhat gingerly, playing it down a little.

For their part, the Latin texts surrounding the word *adulter* or *adultera* evince no undertone of euphemism. Even at best we can probably never get the feel of an ancient language such as we have for our own. So I mention as a mere possibility, on the analogy of English, that *adulter* was at first uttered to express the husband's chagrin.

NOTES

1. The most frequent English gloss on *ad* as a preposition is 'to'. Indeed the present differentiation in spelling between *to* and *too* was due merely to unequal stress, as the adverbial function of *too* got -- and still gets -- more, and so the vowel was held longer.

2. The *-ter* suffix, cognate to the Greek comparative *-τερος* (OG), Sanskrit {tar(ah)}, and the vestigial English comparative *-ther* in *other*, *rather*, *whether* (clearest in *farther*), marks the relation or contrast between two.

3. The diverse outcome of *salīō* 'I jump' : *resiliō* 'I jump back' and the participle or supine *saltum* : *resultum* is due to an allophonic difference in the consonant *l*. The ancient grammarians recognised that the *l* is *exilis* 'thin' in some environments but *pinguis* 'thick' or 'fat' in others. See W. M. Lindsay, *The Latin Language* (Oxford: Clarendon Press, 1894), pp. 89-92.

4. Under Roman law a wife was not entitled to take action against her husband and his *adultera*, such as a husband could in the opposite situation; Ch. Daremberg and Edm. Saglio, *Dictionnaire des antiquités grecques et romaines*, I (Paris: Hachette,

1877), 85, s.v. "adulterium". So in legal contexts the feminine form will be the unfaithful wife. Nevertheless, in a practice speech by the elder Seneca for an imaginary trial (*Controversiae* 6.6) an incestuous woman is described as *generi adultera, filiae paelex* 'her son-in-law's other woman, her daughter's rival'. See my article "Hebrew {p̄i(y)|ēḡēš}, Greek παλλακή, Latin *paelex*," *General Linguistics*, 23 (1973), 191-197. A non-legal text, Catullus' bridal song (61.98), assures the bride that her husband will not forsake her bed for dalliance with a *mala adultera*.

5. One phrase *ad modum*, perhaps originally 'to [the point of] healing, setting right', came to be written and doubtless pronounced as a single word, virtually an adverb 'very'.

6. Also the verb was used by Boethius, who definitely died in 524.

7. *Adulter* functions sometimes as an adjective, either 'adulterous' or 'adulterated'.

8. *Mémoires de la Société de Linguistique de Paris*, 22 (1922), 69.

9. English *at* is an Indo-European cognate of *ad*, but somewhat more restricted semantically.

10. Similarly *gentem ad finem* 'a nation on the border', *gentem ad finem* 'a neighboring nation'.

11. On this point I have with much profit consulted my colleague, Prof. Daniel Williman. Only Catholic translations of the Bible, to my knowledge, have "coheirs" in Rom. 8:17, Eph. 3:6, I Peter 3:7; for they depend the most on the Latin Vulgate (*coheredes, coheredibus*). But Bishop Challoner's revision (in 1749) of the old Douay version changed it to "joint heirs" in Rom. 8:17 and to "fellow heirs" in Eph. 3:6.

12. As a corollary, the verb *adulterō* is the direct denominative from *adulter* and does not depend on *alterō*, which appears to have been formed later.

13. In *Metamorphoses* 2.513 the goddess Juno complains *pro me tenet altera caelum* 'another [i.e. Jupiter's beloved Callisto] is occupying heaven instead of me', where -- except for the meter -- she might well have said *adultera*.

14. The *OED* revised ed. (1989) reproduces the material from the Supplement exactly. The definition does not sound quite right: "the other man (and varr.): a man with whom a woman already in an amatory relationship forms a new attachment; a lover. Similarly the other woman: a woman with whom a man forms a new attachment in such circumstances; a mistress." Some of the quoted passages refer plainly to a marriage (whether or not there is love between the husband and wife), rather than to what I would call an "amatory relationship".

15. Prof. Rosmarie Morewedge of the State University of New York at Binghamton, and Prof. Wolfram Wilss of the Universität des Saarlandes.

16. Published in 1888; the guilt of the straying young wife is mitigated by the circumstance that she was in love with this man before her parents made her marry, against her will, an elderly colonel, who treated her unkindly. My daughter, Margaret Levin

Phillips, showed me a more recent collection of stories including this one.

17. Not found in the most thorough dictionaries, and this is not due to inadvertent omission; so I am informed from Paris by my friend, Prof. Maurice Pergnier.

THE INCIDENCE OF SUPPLETION WITHIN INFLECTION

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Suppletion (or lexical variation) occurs in various languages, and with striking regularity in certain semantic categories, but is usually treated as an anomalous occurrence requiring little attention. The most extensive treatment for Indo-European remains Hermann Osthoff's of 1899. (1) He cites detailed factual material for the Indo-European occurrences, but explains data in phrases such as "naive, language-creating primitive man," asserting with Georg Curtius that "The Indo-Germans designated varieties of going earlier than the general concept of going." (2) This does not motivate the movement away from the discrete Latin ambulare, vadere and ire ("varieties") into a single Romance verb (thus aller / je vais / j'irai in French), or in English go / went from the earlier discrete go and wend.

The present article demonstrates that suppletion is a more consistent manifestation of underlying trends, particularly those relating to the segmentation of space and to deictic (pointing, or "this / that") distinctions, than hitherto recognized. Here suppletion is formally defined as: "A regular semantic association within one paradigm or one regular derivational relationship (that is tense or aspect or mood formation, conjugation, declension, formation of the degrees of the adjective, of ordinal numerals, etc.) of etymologically different roots, such association being anomalous in the great majority of verbal, adjectival or nominal paradigms in the language (that use flexion or regular derivation only), but being of regular occurrence in the roots so linked." English examples are go / went, or good / better. Less familiar are Finnish hyvä (good), parempi (better), paras (best), Georgian kargi (good), u-kete-si (better), sa-u-kete-so (best).

The definition is limited primarily to declensional and conjugational processes. This restricts the discussion to the central part of the possible suppletive spectrum. At one end the spectrum could include "phonetic" suppletion—resulting from the change over time of roots originally of the same etymological origin (French un oeil / les yeux for eye / eyes). At the other end the suppletive spectrum could extend into word formation (thus cow / bull; dead / to kill—cp. the child's "I deaded him"; Ancient Greek kteinō "I kill" and passive apothneskō—"I die"; son / daughter; ram / ewe). Borderline phenomena also occur, as in noun pluralization, which for human beings and animals in

particular may be expressed through flexional, affixational or word formation processes (or a mixture of these). However, the central part of the suppletive spectrum—etymological suppletion within the flexional patterns—is the present theme.

The crossing of a spatial boundary appears to be an important factor in the emergence of etymological suppletion in verbs, such as go / went. In pronouns, as in the adjective, a pointing or deictic element may be discerned whereby suppletion emphasizes semantic distinctions. Suppletion frequently serves to stress the spatial differentiation between the three persons ("I and my space here," "you and your space there," and "the third person farther away over there," correlating with Spanish este "this" / ese "that" / aquel "that in the distance," or with the Georgian es (this), eg (that nearby) and is (that distant) or Latin hic, istic and illic. In the first person, a suppletively reinforced subject-object binary distinction (I / me, we / us) may occur. In the process of differentiation there are also correlative parameters in some of the suppletive categories, as exemplified in the Eastern Slavic verbs of body position ("lying, sitting and standing"), first in repose, next with reflexive movement ("to lie down," etc.), then transitive with a direct object other than the self ("to lay down" etc.). (3) In this group, where crossing a spatial boundary (as in the perfect tense or perfective aspect of the past tense—Latin tuli, Russian vzjal "I took") plays an important role in the occurrence of suppletion, a striking series of suppletive clusterings is for instance found in three closely linked Eastern Slavic languages. Similar clusterings in Ancient Greek suggest themselves (keimai / tithēmi, kathízein, istēmi).

Some ordinal numerals and the degrees of some adjectives are well-known suppletives, within Indo-European at least. Examples in non-Indo-European languages also show suppletion in the same semantic categories, which include adjectives designating the qualities "good" and "bad."

The strength of a "this" / "that" distinction, with second and third terms mostly from the same etymological root, is noteworthy in the degrees of the adjective in the following: Finnish hyvä (good), parempi (better), paras (best); English good, better, best; Swedish ond (bad), värre (worse), värst (worst); Swedish liten (little), mindre (smaller), mindst (smallest); Swedish dålig (bad/poor), sämre, sämst; Georgian kargi (good), u-kete-si (better), sa-u-kete-so (best); cudi (bad), u-are-si (worse); Dutch kwaad or slecht, erger, ergst (bad, worse, worst); Italian cattivo, peggiore; Ancient Greek agathos, ameinon, aristos and beltion, beltistos (or belteros, beltatos) or kreisson, kratistos or loion, loistos; and [kheres obsolete for bad] kheiron, kheiristos or esson, ekistos with a non-suppletive kargi and cudi forms in the Georgian degrees. The less frequent association of three different suppletive forms (rather than two) is seen for instance in Latin bonus, melior, optimus (good / better / best), or the series agathos, ameinon,

^{2/}aristos of Classical Greek, which is rich in suppletive variants.

Apart from non-suppletive Romanian: bun, mai bun and cel mai bun (good / better / best), other modern Romance languages mostly continue the Latin-derived suppletives for the comparative, as for example in French bon, meilleur and Portuguese bom, melhor.

Celtic examples are Irish maith (good) and fearr (better) with olc (bad) and measa (worse). Welsh like Latin and Greek has three suppletive terms in its da (good), gwell (better) and gorau (best), but two in drwg (bad), gwaeth (worse) and gwaethaf (worst). Arabic too has tayyib (good) but khair (better), and Estonian is similar to the cognate Finnish in its suppletive distinction: hää, parem, parim for "good / better / best."

Suppletion does not occur, in all the languages mentioned above, in the overwhelming majority of their adjectival degrees of comparison. The suppletive anomaly therefore requires a rational explanation, because it arises in languages as different as Finnish, Georgian, Arabic and, as noted below, in Swahili too. Etymological suppletion frequently occurs in the same semantic groups of adjectives ("good" and "bad," for instance), and often it freshly introduces new roots (as in the Germanic languages), in different places and in different epochs.

The derivation of ordinal numerals from the corresponding cardinals often occurs by adding an adjectivalizing ending. However, in those ordinals which correspond to "one," "two" and sometimes "three" suppletive anomalies are found. Finnish yksi (one) and ensimmäinen (first) are examples. Both Hungarian and Finnish form two, second suppletively (két [or kettő], második and kaksi, toinen respectively). While Turkish rejects suppletion for "one / first" and "two / second" (with bir, birinci and iki, ikinci respectively), Swahili uses the process for "one / first": moja, (kw)-anza, where the -anza root is from a "beginning" verb. The Arabic wāḥid (one) and el awwal (first) relationship is also suppletive. Georgian porveli "first" forms suppletively, orti being "one," while ori "two," sami "three" and so forth have ordinals me-ori, me-sami without suppletion.

A striking feature of the above adjectives and ordinals is the frequency with which the first term (i.e. the positive degree of "good" or "bad," or the word for "first") comes to be replaced in a suppletive equation. Thus, the positive degree of the word for "good" is more subject to replacement and obsolescence than the comparative and superlative degrees. English examples, easily multiplied in other languages (like the French formidable after World War II) range through "good, terrific, spiffing, smashing, wonderful, first class, super, cool," including many ephemeral slang words. Similar lists could be made for "bad" replacements. Evidently considerable expressive pressure toward suppletion is exerted on the positive degree of "good" and "bad" (or on premier in French from Latin primus to remain suppletive as opposed to French deuxième or second). Pressure is absent in the comparative or superlative degrees (or in the word for "third" in the ordinals) where an element of more measured

choice between three appears to prevail. Etymological difficulties therefore frequently arise in establishing the origins of the somewhat volatile positive degrees of adjectives in this group. Xorosij ("good" in Russian) is hard-to-pin-down etymologically. Bad is a puzzle in English, and agathos is of uncertain origin in Ancient Greek, although the other two degrees find explanations.

The chronological primacy of their comparative / superlative forms, which in most other adjectives derive from the positive degree, is further illustrated by greater productivity of the comparative and superlative forms. Thus he bettered his lot, his condition worsened, he bested his opponent, verbessern in German, but not he "gooded" or "badded" anything normally. It is not true to state that the adjective "good" forms its comparative and superlative degrees suppletively. Rather, the comparatives and superlatives better, best, or worse, worst form their positive degrees suppletively.

Apart from the sequential ordinal adjectives (first, second, etc.) other positional adjectives show suppletion. Finnish uses an additional root suppletively in the meaning of "second" or "latter"—jälkimmäinen from jälki (trace, or trail), in meaning similar to Russian sledujuscij ("following" or "next"). Such oppositions are reminiscent of celui-ci and celui-là in French, dieser and jener in German or tot and etot in Russian, all in the meaning of the latter / the former. Suppletion in the ordinals tends not to occur beyond "second" (cp. Italian secondo and a varying French second or deuxième). After the main boundary between "this" and "that" is crossed suppletive reinforcement is less required (in "third" and "fourth" positions, etc.).

However, as well as an intermediate, but boundary-crossing "next" concept one other unquantified yet "final" member of the ordinal series shows suppletive tendencies. It occurs in the semantic field of "last," and is illustrated in the juxtaposition of first and last or of former and latter. The Russian word for "last" (poslednij) is often replaced by krajnij in colloquial speech. Poslednij is of higher style (derived from Church Slavonic) and would normally mean only "following," not "last," as po sledu means "in the steps of" or "after"). Kraj, on the other hand, is the "edge," a clear boundary. This is why the question "Kto krajnij?" (meaning literally "Who is the one on the edge?" but used for "Who is the last in line?") is heard in Russian stores. One common feature in the suppletively-aided juxtapositions linking former / latter, first / second, good / better, first / last is a sharp spatial boundary in the pairs. While in certain adjectives the degrees of comparison tend to display suppletive processes, in some verbs a contrast typically emerges in present versus perfect or aorist or future (or in the opposition between imperfective / perfective aspects in Slavic), or in the present / imperative. Suppletive oppositions between persons, numbers and voices occur in French, Georgian and Latin.

The statistically overwhelming patterns are provided by

Latin present and perfect tense amo / amavi, Russian delai / sdelai ("I did"—using a prefixed perfective) or rešal / rešil ("decided"—with an affixational relationship in the imperfective and perfective aspects respectively), or by English have / had. Statistically less frequent examples (with suppletion) are found in: Latin fero, tuli, (t)latus; Greek phérō / lísō (I will take); Russian imperfective / perfective infinitives brat' / vzjat' (to take), govorit' / skazat' (to speak or say) or lovit' / pojmat' (to catch); Polish mówić / powiedzieć (to speak or say) and widzieć / zobaczyć or ujrzeć (to see); English go / went.

In the earliest written form of Slavic, Church Slavonic, the specific roots linked may differ from those in the modern languages, but suppletively-based aspectual distinctions still occur in similar semantic groups: thus Church Slavonic glagolati / rešti (to speak, say), viděti / uz'reti (to see) and metati / vresti (to throw), in the imperfective and perfective aspects respectively. Although the pairings change over time, a limited number of verbal semantic clusters is involved (including "to be, to take or bring, say or speak or tell, see, hear, catch, go or come, eat," as already listed by Osthoff in 1899. Why these specific clusters are subject to suppletion has been neglected.

Again the same clusters, with different etymological roots linked suppletively, occur in the Celtic languages too, as Modern Irish cloisim / chuala ("I hear," and preterite "I heard"). The Welsh second person imperatives hwde / hwdiwh ("take") are suppletive to cymmeraf ("I take"). Irish deirim ("I say") has an imperative abair, Irish teim ("I go") a preterite chuas, a future raghad ("I shall go"). Irish gheibim ("I get") has a preterite thugas, and beirim ("I take")—rug ("took"). Albanian has vij ("I come") and aorist erdha, bie ("I bring") and aorist prura.

Outside Indo-European examples occur in the Georgian present and future forms respectively v-xedav / v-naxav ("I see / I will see") (4), or v-svam ("I drink") / da-vlev ("I will drink") and in Lezghian where some imperatives and supines of "eat, come, give, die, hold" verbs are formed suppletively. (5) The Arabic yîjî ("he comes") has an imperative form tâ'âl ("come").

More familiar examples are: Ancient Greek present / aorist contrasts esthiō / ēphagō ("I eat / ate"); ōrō / ēidon ("I see / saw"); airōō ("I catch") / eilon; trēkhō ("I run") and ēdramon; agoreuō or lēgō ("I say") and aorist eipōn; further phérō ("I carry"), future lísō, and ēnegkon (aorist); onōumai ("I buy") and ēpriamēn (aorist) with an imperative prōō; pōlō ("I sell"—more rarely apodidomai) with aorist apedōmēn and perfect pépraka. Modern Greek, with trōgō / ēphagō ("eat / ate") and blépō / ēīda ("see / saw"), still shows suppletion. Strikingly one root has been replaced in each pair in comparison with Ancient Greek. The ancient blépō "I look" is borrowed for "see" and trōgō "I gnaw / chew" for "eat," but the new equations remain suppletive).

Sometimes the suppletive process has further ramifications over time, as when the Latin sufferre shows a perfect sustinii rather than an expected su(b)stuli. This occurs presumably in

part because tollo, sustuli already existed. The latter were exerting pressure, in the sense that su(b)stuli was "bespoken" for tollo. In French the discrete Latin verbs for "going" ambulare, vadere, ire collapse as aller / je vais / ça ira into one regular paradigm, as do the parallels in most of the other Romance languages, with anomalies such as a single Romanian root merge ("to go" derived from "to sink" in Latin)—reminiscent of the non-suppletive Rumanian series bun, mai bun, cel mai bun (good, better, best). Other suppletives arise when parts of the verb "to be" enter the "to go" paradigm. Thus, in the Spanish andar / vamos / iré additional suppletives such as fu function as preterites. In Ancient Greek badizein and steikhein ("to walk") do not fit together in a single equation, whereas erkhomai / elthon ("go / went") certainly do. In Bulgarian replacement of a "to go" verb (of the Slavic id-root type) with a single verb vurva (with its "to thread" etymology) compares with "to thread one's way" in English. Serbo-Croat uses a Slavic laz-root ("to crawl" originally) in its "to go" verbs, as in izlaziti ("to go out").

One of the best known suppletive verbs in Indo-European is "to be." The different roots represent "existing", "dwelling", "living", "abiding" and perhaps just a copula linking subject and predicate. The links between "to be" and "to go" are noteworthy, and are illustrated in the English intermixing of "He's // been in France / been to France / gone to France" (with "I've gone to France" only in sentences of the "Tell him I've gone to France" type). The expression "He's been to France" indicates a boundary crossed twice in a round trip. "Been" thus serves as a variant past participle to the English go / went pair. The "to take" pair in Russian shows similar evidence of a round trip in one of the members. Thus the sentence "Kto moj nožik bral?," using the imperfective past tense bral means: "Who took my knife?" [but the knife is still here, showing signs of use, or of having been used or moved without permission]. The perfective equivalent: "Kto moj nožik vzjal?" means "Who took my knife?" [and didn't bring it back]. The complex interlacing of forms from "to go" and "to be" (as in Spanish and English, say) shows suppletive oppositions relating to boundary crossing. Georgian also uses "to be" forms in its conjugation of "to go" (mi-v-di-var "I go," mi-di-xar "thou goest" in which var "I am" and xar "thou art" appear). (6)

Non-Indo-European verbs for "to be" also contain suppletive elements, like Hungarian lenni ("to be") and van ("is") with corresponding lesz ("will be") and volt ("was"); or Georgian v-ar (I am) but v-igav-i (I was), and v-igo (let me be) but v-icneb-i (I will be). The Hungarian "to come" / "to go" also shows suppletion, as in jönni = "to come" with its imperative gyere (ide) ("come here") alongside the non-suppletive jer. Further "be" and "go" links are seen in the accentually differentiated Ancient Greek forms ēimi and eimi (Latin sum and ibo respectively). Georgian has mi-v-di-var (I go), but mi-ved-i (I went), and yet another root svl-a functions as the infinitive

"to go." Japanese also, with an honorific system relating to the relative positions of the three different persons, uses multiple verbs, suppletively, for "to be" (iru, oru and gozaru), and occasionally a four-way coalescence occurs between "be," "come," "go" and "stay" (as in irasshaimasu or oide ni narimasu). (7)

In viewing suppletion as marking the crossing of spatial boundaries the English verb "to carry" is relevant. The first edition of the Oxford English Dictionary establishes its two main groups of meanings: (a) "to remove or transport"; (b) "to support or bear up." In the first of these the verb "to take" is "now largely substituted" for the older "to carry." An example cited is: "Take (US sometimes "carry") this upstairs." Suppletion of "to carry" is thus occurring in the first but not the second group. Only the first ("to remove or transport"), in which suppletion occurs, implies crossing a spatial boundary. The Middle English "to take" verb had itself "gradually superseded the OE niman." Such supersession is remarkably similar to that noted, quite independently, in the Eastern Slavic imperfective and perfective infinitival pairs brat' / vzjat' ("to take"), and in the much earlier Latin fero / tuli or Greek phero / oiso.

A parallel exists with what Lucien Tesnière called "verbes de mouvement" as opposed to "verbes de déplacement." (8) The "déplacement," or crossing a boundary, is also marked in French by conjugation in the past perfect with être, not avoir (je suis allé dans le jardin but j'ai marché dans le jardin). On "to go / went" in English the OED comments that from about 1500 onwards "went" became the most natural past tense of "to go." It thus appears that in a suppletive verbal pair one member marks the crossing of a spatial boundary.

Additional examples of crossing boundaries in suppletion are seen in the verbs of "putting" an object (or oneself) into a position of standing, lying or sitting, say, but with hanging also a possibility. The Russian verb "to put (down in a flat position)" uses an imperfective infinitive klast' (cognate with hladan in OHG, laden in Modern German and load in Modern English) and a perfective infinitive polozit' (with a root element -loz- cognate with German liegen, English lie). In modern Russian the original unprefixated imperfective infinitive *lozit' is no longer used, while an expected perfective infinitive of klast'—poklast'—is dialectal only. These verbs are discussed elsewhere. (9)

Some general conclusions arise from the above material. In addition to the boundary-crossing concept, the distinction arises between the 'here' and 'there,' the 'this' and 'that,' and in certain cases also where the first, second, and third persons are suppletively marked. While Japanese has no flexion in nouns, but only in verbs and adjectives, its honorific system in verbs is predicated on relations between the grammatical 1st, 2nd and 3rd persons (although persons and numbers remain unexpressed in verbal flexion). In the verbs for "to give," for instance, the grammatical persons involved are the issue, not another kind of spatial boundary, nor yet the directional differences of take /

bring, go / come or hin und her verbs in German. Two giving verbs in Japanese are ageru and kureru. Ageru is used for 'downward' movement (in the framework of grammatical persons, not of physical space), as when a grammatically first person gives to the second person, or to the third person (thus Watashi wa sensei ni pen wo agemashita--I gave the teacher a pen), the second to the third, or the third person to the third person. Kureru is used for 'upward' movement, as when the second or third person gives to the first person (as in Sensei wa watashi ni pen wo kuremashita--Teacher gave me a pen), or when the third person gives to the second person. (10) Despite the complexities of the Japanese system and the use of multiple honorific forms it remains noteworthy that similar verbal semantic clusters are involved ("go, come, be, stay, say, see," etc.) in Japanese suppletion as in Indo-European and other languages. (11) Conjugational endings may not change by person in Japanese, but three-way distinctions exist (kore 'this', sore 'that near' and are 'that far').

While in German hin and her (hingehen and hergehen) show a "thither" / "hither" distinction, spatial considerations coexist with tense in that language. In Abaza, however, the emphasis on spatiality seems to have neutralized tense. Abaza's directional particles for here / hither and there / thither (or neither), as W. S. Allen notes, show "contextualization of the directive system"; for directional or locational particles two "relevant locations" are where the "initiation of the motion" occurs and the "location of the speaker at the time of speaking." (12)

Another useful concept is that of ergativity. G. A. Klimov writes that languages with ergatives (or "active" languages as he also calls them), when classified on a purely typological basis "show a clear tendency toward having many suppletive verbs opposed by grammatical number of subject or object." (13) He cites the Georgian verbs "to hang" and "to sit." In the Georgian verb "to sit" an infinitive dɔd-oma is used for singular forms and sxd-oma for plurals. The present ("I sit" etc.) is v-zi-var, zi-xar, zi-s in the singular and v-sxd-var, sxd-var, sxd-an in the plural. (14) Also, in "to hang" -b- and -sx- forms respectively distinguish singular from plural. These verbs again relate to body position. Suppletion strengthens grammatical boundaries or oppositions (singular-plural, present-past). The French je vais, tu vas, il va, with a plural nous allons, vous allez (but ils vont) is also nearly singular-plural differentiated. Only the third plural ils vont breaks the opposition, although Georgian too may break a neat singular-plural suppletive opposition if collective nouns govern the third person singular or plural, especially in colloquial style (often non-suppletive in the Georgian "to sit" verb). The French aller oppositions occur within a "subject-agent" or "nominative-accusative" system, and not in the "subject-patient" or "ergative-absolute" type, to use Bernard Comrie's convenient differential terminology. (15) On the other hand, aller is

intransitive in French, and does not have to conform to a nominative-accusative system. The near-complete contrast of singular and plural in the French present tense of aller is remarkably similar to that of the Georgian "to sit."

The nearest space is the most subject to marking by suppletion (with I versus you, even I versus me in terms of 'grammatical' space). In pronouns the first person is more affected than the second person (cp. English I / me, we / us), and the third person relatively little. Other grammatical relationships affected are the positive degree of certain adjectives, singular / plural nominal distinctions, oppositions between the present and preterite (or aorist, or perfect, or perfective in Slavic), indicative and imperative mood contrasts, and the first member of the ordinal numeral series especially.

It is asserted that suppletion just affects the most frequent words, and that no regularities are to be discerned in it. While the statistical study of vocabulary may identify anomalies, it does not explain them. Zipf has shown the direct relationship between the number of different meanings of a word and its relative frequency of occurrence, "with the possible exception of the few dozen most frequent words." (16) Suppletive forms are in a paradigmatically highly anomalous situation. Generations of children ("I goed there," "gooder," "badder") try to suppress the ever renewed suppletive forms in the semantic groups concerned.

Moreover, frequent words are marked by suppletion, but not necessarily the most frequent. "To have" is rarely affected, whereas "to be" often is. "To come" is more often encountered than "to go," yet the first rarely has suppletive forms when a language distinguishes sharply between the "come" and "go" roots.

Some languages are flexionless, so 'etymological suppletion in flexion' cannot occur in Chinese. The central conditioning factors where suppletion does occur are: boundary crossing in the verb; the spatial parameters of the first, second and third person pronouns; a "this / that" relationship of the first member in adjectival degrees of comparison, or in the first member in a series of ordinal numerals. Suppletion may mark a singular-plural distinction in nouns, pronouns and occasionally verbs, and also subject-object oppositions in pronouns. Present versus preterite (i.e. the aorist, perfect tense or perfective aspect in various languages), present-future or active mood versus imperative mood oppositions in verbs may be categorized by suppletive processes representing an extra-paradigmatic and unusual mechanism. It has further been shown that the same semantic categories are subject to suppletion in different language groups. The process is a continuing one, since words in these categories are particularly subject to replacement over the centuries with new suppletive forms.

Footnotes

(1) Hermann Osthoff, Vom Suppletivwesen der indogermanischen Sprachen. Alfred Wolff Verlag, Heidelberg, 1900.

(2) Ibid., p. 47. The German is: "Der naive sprachschöpfende Urmensch..." and "Die Indogermanen also bezeichneten früher die Varietäten, als den allgemeinen Begriff des Gehens."

(3) John G. Nicholson, "Correlative Dependencies of a Suppletive Nature in the East Slavic Verbal Paradigm," Paper presented at the Xth International Congress of Slavists, Sofia, Bulgaria, 1988.

(4) Canadian Slavonic Papers, March 1988, Toronto, pp. 34-40. See also Nicholson's: "Russian Verbal Aspect and 'Aktionsart'," Slavic and East European Studies 12 (Montreal, 1967): 50-54; "Suppletion and Semantic Distance," Ibid. 18 (1973): 32-42; "Suppletion, Spatial Correlatives and the Boundary Concept," Ibid., 20-21 (1976): 20-30.

(5) Bernard Comrie, Aspect. An Introduction to the Study of Aspect and Related Problems, Cambridge, 1976, p. 98.

(6) Igor A. Mel'čuk, "Suppletivologičeskie etjudy. II," [Suppletivological Studies. II] Russian Linguistics 7 (Dordrecht 1983): 207-218, here p. 217.

(7) Kita Tschenkéli, Einführung in die georgische Sprache, Band 1, Theoretischer Teil, Zürich, 1958, p. 79.

(8) Yoshida Yasuo, chief editor, Japanese for Today, Tokyo, 1973, p. 362 and Joseph K. Yamagiya, Modern Conversational Japanese, New York, 1942, p. 180.

(9) Lucien Tesnière, Éléments de syntaxe structurale, C. Klincksieck, Paris, 1959, pp. 307-310.

(10) Nicholson, "Correlative Dependencies..."

(11) See Japanese for Today, pp. 206-207.

(12) John Hinds, Japanese, Croom Helm, London, 1986, p. 326.

(13) W. Sidney Allen, "Structure and System in the Abaza Verbal Complex," Transactions of the Philological Society, 1956, p. 165.

(14) Georgij A. Klimov, Očerki obščej teorii ergativnosti [An Outline of a General Theory of Ergativity], Moscow, 1973, pp. 133-134, 185 and 223; also I. A. Mel'čuk, "On Suppletion," Linguistics 170 (The Hague 1976): 45-90, p. 69 espec.

(15) Tschenkéli, op. cit., p. 313.

(16) See Bernard Comrie, Language Universals and Linguistic Typology, Oxford, 1981, p. 64.

(17) See Stephen Ullmann, "Semantic Universals," pp. 217-262 in Joseph H. Greenberg, editor, Universals of Language, M.I.T. Press, Cambridge, Massachusetts, 1966, p. 223.

A COMPARATIVE LINGUISTIC ANALYSIS:
ENGLISH, FINNISH AND HUNGARIAN LETTER-NAMES

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Introduction

While reading specialists, educators, psychologists, sociologists and other concerned citizens have been engaged in finding external causes for functional illiteracy in English-speaking countries, an inherent internal cause (our unnecessarily inconsistent orthography) has received too little attention by linguists.

Only recently has an in-depth phoneme-grapheme quantitative analysis (Nyikos, 1988a:13-16; 1988b:147-163) found a 1:26.60 ratio (as amended by Nyikos, 1989:515). This sound-symbol relationship was established on the basis of the first pronunciation variants* of words and names classified as *commonly* used in conversations and readings of educated Americans. (Without these rigorously imposed restrictions, the ratios are substantially higher.)

Quantification of phoneme and grapheme components and relations in English orthography as briefly mentioned above can shed light on the primary difficulty in literacy acquisition. The nature of this immense problem can be further underscored by examining the infrastructure of the numerical overabundance of the graphemes of some 40 English phonemes. An attempt to systematize this vast array of graphemic representations of 40 English phonemes into a comprehensive framework tentatively established 12 lead categories, 24 main categories and 90 variegated subcategories (Nyikos, 1989:516-527).

A seemingly chaotic, tangled web of *patterns* of graphemes was systematically assembled, resulting in graphemic structural categories. They range from single letters fractured into thirds, each fraction representing one phoneme, to pentagraphs. Influences of the so-called silent "e," apostrophes in three different positions and ten varieties of diacritics complicated the task of applying a rigorously consistent methodology to classify these grapheme patterns. It also further highlighted the arduous task set before eager (and reluctant) young learners and committed teachers alike.

Compounding these complexities is the seemingly inevitable traditional introduction to teaching the decoding of English script: the *names* of the 26 letters of English. A thorough linguistic analysis of their names may seem too elementary and unsophisticated, yet this is hardly the case.

* This refers to first pronunciation variants as listed in generally used American dictionaries: see "Technical explanations" or "References."

Focus of this study

Subjecting the names of the alphabet's components and their interrelations to an in-depth linguistic analysis is necessary because it appears to have been taken so much for granted as to be totally neglected. Yet this is a serious oversight in light of the fact that letter-names in English not only constitute the fundamental first step but continue as all-pervasive, ever-present references in English reading and writing. Their confusing, inconsistent values are most certainly significant barriers to initial literacy acquisition.

Ernest L. Boyer, President of the Carnegie Foundation for the Advancement of Teaching takes a realistic view:

...we must give priority to early education. Almost everyone agrees that if children are to succeed educationally, they must have a good beginning - and that for those most at risk, universal preschool education is essential (Boyer, 1990:4).

It is logical to reason that the quality of the introduction to two of the three R's (reading and writing) plays a significant role in the ultimate success or failure of the undertaking. This first step consists of naming the letters of English orthography, a sub-task which demands a realistic awareness of its scope and complex relation to the main task of learning to read and write. The impact of this added abstraction on the entire acquisition process is the major point of this paper.

For a number of reasons, incomparably more numerous and appreciably lengthier references are made to letter-names in English than in any of the languages of whose orthography I have at least basic awareness. (In descending order of familiarity they are: Hungarian, German, Latin, Finnish, Estonian, Italian, Spanish, Romanian, Croatian, Czech, Slovak, Polish.) In these orthographies, phoneme-grapheme ratios are either practically 1-1 (in Latin, Finnish and Estonian) or so favorable (in the others) that few orthographical questions arise and when they do, they practically never concern an entire word or name, only a critical portion of it. The most obvious reason for a preoccupation with spelling through the recitation of the component letter-names of English words and proper names is the all too unpredictable and complex phoneme-grapheme relationship which necessitates orthographical concerns extending throughout the years of one's schooling.

Additional reasons for a practically life-long concern are:

1. the capriciously diverse spelling of a great many ancestral English, Irish, Scotch and Welsh proper names,
2. the divergent spelling of many proper names of immigrants from a large number of foreign countries with languages whose orthographies differ greatly from English,
3. a never-ceasing influx of loanwords into English without any concerted effort to anglicize their spelling,
4. an ever-increasing creation of a vast assortment of abbreviations in everyday life.*

* The number and frequency of such abbreviations can be judged by examining abbreviations culled from the March, 1990 issue of the Reader's Digest, the most widely-read English-language periodical. Included are 27 different abbreviations which range from AP to USUHS, with such abbreviations as U.S.A. and M.D. occurring repeatedly.

Cross-linguistic aspects

The emphatic need for at least a limited cross-linguistic investigation of the conceptualization and utilization of letter names in orthographies other than English comes sharply into focus when one notes the disconcerting tendency of many publications in the area of literacy instruction: they make pronouncements of universal validity solely - or mostly - on the basis of English (or perhaps French), without due consideration given to the individual characteristics of orthographies of other languages. Typical of such sweeping generalizations are recent statements by two cognitive psychologists in their work, The Psychology of Reading:

Since there are usually fewer letters than phonemes in a language, it may be easier to have some ambiguities in the representation of the sound than to use a larger set of symbols which would necessitate finer visual discriminations...

...perhaps most important, the makers of alphabets may not have understood what phonemes are (Rayner and Pollatsek, 1989:34;35).

These statements are only marginally true at best for the orthographies listed above and not at all for the parent orthography of most European languages, Latin.

The Roman scholars in whose hands Latin orthography developed through the centuries (on the basis of Greek orthography) "understood what phonemes are" with amazing clarity. They even understood the principle of complementary distribution and utilized it successfully. Just one example is the seemingly triple representation of the phoneme /k/ by the letters "c," "q" and "x" (i.e. the first half of the symbol of the consonant cluster /ks/) and the double representation of the phoneme /s/ by the letters "s" and "x" (the second half of the letter "x"). Latin letters "c," "q" and "x" are in perfect complementary distribution, with "q" representing only the first component of the consonant cluster "qu" /kw/ (e.g. *quinque*) and "x" used only for symbolizing the consonant cluster /ks/ (e.g. *pax* /paks/). Complementary distribution also governs the application of the letters "s" and "x," with "x" used only for the consonant cluster /ks/ (e.g. *pax* /paks/). Consonantal "v" /v/ and vocalic "u" /u/ were also in complementary distribution for centuries (as in "VITA" and in "AVE" versus "VBI," "GAVDIVM"), until the letter U developed.

In light of the ingenious systematicity of modern English orthography's parent orthography (Latin), it is difficult to excuse the inefficiencies of English spelling.

The purpose of this paper and its sources

The paucity of in-depth evaluative and comparative orthographical analyses is the main inducement for writing this paper. Its purpose is to illustrate that, in addition to the factors mentioned in the "introduction" which have significantly contributed to the difficulty of learning the code of English, another significant factor must be minutely analyzed and documented. This factor can be simply referred to as "the beginning of the beginning" of elementary education in our schools: the naming of the English letters. A rigorous description of the internal contradictions and the many aliases under which these letters function in English orthography is absolutely necessary if the difficulty and inherent abstraction of this vital substep and its transfer to the main task of decoding are to be recognized.

Even articles and book-length treatises whose titles include reference to linguistics fail to analyze letter-names as, for instance, Barnitz's Interrelationship of Orthography and Phonological Structure in Learning to Read (1978), Goodman and Fleming's Psycholinguistics and the Teaching of Reading (1968), Venezky's "English Orthography: Its Graphical Structure and Its Relation to Sound" (1967), Lefevre's Linguistics and the Teaching of Reading (1964), and Fries's erudite Linguistics and Reading (1963) fail to analyze letter-names. Fries does, however, conclude:

To learn the "letters" often means pronouncing the names in order to "spell" words. This...contributes little in the beginning stage of reading (Fries, 1963:124).

Fries also quotes John Hart who made a similarly incisive observation 400 years ago in his A Methode or comfortable beginning for all vnlearned, whereby they may be taught to read English, in a very short time, with pleasure:

...for they [the letters] are misnamed much from their offices and natures, whereby the desirous are more hindered from learning to read... (Hart, 1570 in Fries, 1963:123).

By quoting Hart, Fries appears to identify himself with Hart's most fitting summary judgment by stating that English letters are "misnamed much."

Downing and Leong's exemplarily circumspect Psychology of Reading limits itself to a summary judgment, "Letter-names vary in the extent to which they may provide a clue or mnemonic for the unit of speech that they represent." Only two examples are given, "...In English 'aitch' and 'double you' do not even contain the phonemes that *h* and *w* usually represent." The concise conclusion is that "In other languages, the letter names have more transfer value in this respect." (Downing and Leong, 1982:56).

Samules' (1971 and 1972) concern with letter-names does not extend beyond the pedagogical question of how productive their injection into initial literary teaching is. Nor does the concern of many other researchers whose papers include dealing with letter-names.

Cummings' recent scholarly study (and apologetics for) American English Spelling confines itself to a description of traditional vowel names (Cummings, 1988:203) with a brief partial explanation (204) and only one critical observation concerning the name short /o/, assigned to the vowel /ʊ/ (206), a point which will be discussed in the context of /ʊ/'s name. Downing's promising seminal article on "Literacy Acquisition in Different Languages" reports that his "comparative reading project investigated [among] other possible variables...the names given to the characters of a writing system" but concludes by saying, "Each of these variables would require another article..." (Downing, 1973:153;154).

In addition to consultation of these and similar sources, an item-by-item analysis of each vocabulary and name entry in Merriam-Webster (1984) and a similar survey of selected dictionaries was completed (see "Technical explanations" and "References").

The answer to why it has proved impossible to find a treatise devoted to an in-depth examination of this very exacting topic possibly lies in the fact that it is at once so obvious and yet so baffling. Since learning the English letter-names takes place at the most impressionable age, their internalization may become so thorough and deep-seated that revisiting them linguistically may seem too elementary or too pedestrian to many. To others it may seem to be belaboring the obvious.

The fundamental principle of symbolic systems

The basic principle of any symbolic system is that every symbol must have a unique correspondence to what it symbolizes, to the exclusion of all others and the symbol's name must also be unique to that particular symbol. In other words, a one-to-one equivalence between the symbolized entity, its symbol and the symbol's name is crucial.

In the context of both vehicular and pedestrian traffic, the *red light* signifies "stop" and the *name* of the traffic light's *color* is "red". At no intersection does any other *color* signify "stop" and the *name* of the "stop-color" is always "red;" it is never "blue" or "brown" or "white." Most importantly, it is absolutely unthinkable to use a *green* light for "stop" because the *green* color's function is something entirely different. *Green* is the symbol for "go". It is just as unthinkable to call the "red" light "green" because the *name* "green" is the linguistic symbol of the *color* which signifies "go" in the context of traffic.

Applied to orthography, the basic principle may be defined as follows:

It is the unique correspondence

(1) of the speech sound (=phoneme)

(2) to its written symbol (=grapheme)

(3) and to the grapheme's name

that makes it possible for teachers and learners alike to identify a grapheme with a phoneme to the exclusion of all others. In other words, it is the one-to-one equivalence between the phoneme, its grapheme and the grapheme's name which is imperative.

In order to better highlight this conclusion, let us consider what happened in 1299 on one of the British Isles, in what is today Great Britain. It was a momentous historical event, especially well known not only to historians of British history but also to linguists, whatever their field of specialization may be. Even many high school students know the answer...

Of course, it was the Battle of Hastings!

You say that it took place in 1066? Well, that is exactly what was meant by "1299." Of course, in *this* date the digit "2" means "zero" and the two digits "6" are "spelled" with the digit "9." Consequently, the four digits, "1299," actually represent what the four digits, 1066, normally do. Therefore, "1299" is to be read "ten sixty-six" or "one thousand sixty-six."

It is the one-to-one equivalence between (1) the phoneme, (2) its grapheme and (3) the grapheme's name that makes learning to read and write unambiguous and uncomplicated. By the time a child enters school he/she has fully mastered the oral linguistic sets of symbols of phonemic, morphemic and syntactic nature. Through formal schooling, he/she adds the following symbolic systems to his/her oral repertoire:

(1) the graphic shapes of: (a) printed small letters (b) printed capital letters (c) cursive small letters (d) cursive capital letters

(2) the names of the letters

(3) the graphemic functions of the letters in representing the phonemes.

(4) In a large number of American schools, a simplified phonetic IBM-initiated and aided transcription which serves as a connecting link between phonemes and graphemes is learned. It is introduced in first grade.

(5) A phonetic transcription system for dictionary use (which varies in details from dictionary to dictionary) is usually introduced in about third grade.

The child's assigned task is learning the interrelationship of these symbolic systems. No doubt, the closer the adherence to the basic laws of symbolic systems, the greater the efficiency of learning them.

While the four variations of graphic shapes (a,b,c,d) within the symbolic system are consistent in themselves, any inconsistency in letter-names and phoneme representations is a serious added cognitive burden for the developing learner.

Technical explanations

(1) *Dictionary titles* have been abbreviated by using their initials. These initials have been placed into parentheses following each vocabulary item or name whose source of pronunciation variant is a dictionary *other* than *Merriam-Webster*. The initial (A) stands for *The American Heritage Dictionary*, 1982; -- (F) for *Funk and Wagnalls Standard Dictionary*, 1980; -- (N) for *Webster's New World Dictionary*, 1988; -- (R) for *The Random House College Dictionary*, 1973.

(2) Asterisks not referring to footnotes designate plural forms of nouns and third person singular forms of verbs quoted.

(3) Parentheses have also been used for enclosing a frequently accompanying word following a quoted one, e.g. "graham (cracker)."

(4) *Fractions of letters* which symbolize full phonemes are boxed, e.g. the first half of the capital letter "h" is boxed in the following manner: "H." It indicates representation of the phoneme /e/ in the letter-name /eč/. The first half of the capital letter "h" and its apostrophe are boxed in the following manner, "H," indicating representation of the phoneme /e/ in the apostrophized letter-name /eč/, which occurs in "4H-er," meaning a member of a 4H Club.

ENGLISH LETTER-NAMES

Names of unlabeled single vowel letters of the alphabet

It might seem logical to assume that the five vowel names which are an integral part of the English alphabet would play the most consistent and therefore the least complicated roles in representing phonemes. In the traditional listing of the letters of the alphabet, they appear without any descriptive sound attributes and they will therefore be referred to as "unlabeled."

(1) **a**: The name of the letter "a" is the vowel phoneme /e/. (More precisely, it is the diphthong phoneme /ey/.) This letter "a" (whose name is /e/) represents the following phonemes: /ɪ/ as in: Raphael, /ɜ:/ manage, /e/: apron, aCe: ape, /æ/: any, aCe: care, /æ/: mass, aCe: dare, /ə/: America, aCe: senate, /ʌ/: was (A.R), /o/: cacao, /ʌ/: all, /a/: father, /ə/: comfortable.

Total number of phonemic functions of the letter "a" /e/: 15

The name of the letter "a" is the vowel phoneme /e/. This phoneme /e/ is represented by the following graphemes: A: NAACP (N double ACP), a: aviation, aCe: ate, e: debut, e: déjà vu, e: suède, e: mêlée, H: 4H, H: 4H-er, J: JC, K: KP, K: OKing, ae: Israeli, ah: graham (cracker), ai: aim, au: gauge, ay: ray, ea: great, ee: entree, ei: vein, er: dossier, et: buffet, ey: survey, ez: laissez-faire, ie: lingerie, at: maître (d'hôtel), ee: divorcee, es: après-ski, ait: parfait, ave: Fave, eii: Pompeii, ets: filets*(mignons), aigh: straight, eigh: weigh.

Total number of graphemic representations of the letter-name "a" /e/: 35

(2) **e**: The name of the letter "e" is the vowel phoneme /ɪ/. This letter "e" (whose name is /ɪ/) represents the following phonemes: /ɪ/: equal, eCe: eve, /ɜ/: eleven, /e/: elite, /ɛ/: ebb, /æ/: there, /ə/: believe, /ʌ/: yecch (A.R), /ʏ/: Khrushchey, /a/: entree.

Total number of phonemic functions of the letter "e" /i/: 10

The name of the letter "e" is the vowel phoneme /i/. This phoneme /i/ is represented by the following graphemes: a: Israel, E: NEA, e: edict, eCe: eke, i: martini, y: baby, E: crème (de cacao), i: naïve, **E, C, D, G, F, T, V, Z: FBI, CIA, MD, GI, PTA, TV, TV, DMZ, I**: Hawaii /həweɪy/, **e**: maître **e**, ae: sundae, ay: Monday, ea: eat, ee: eel, eh: vehicle, ei: either, eo: people, er: catercorner, ey: key, oe: subpoena, ie: field, ii: Hawaii /həweɪ/, is: debris, it: esprit, ix: (grand) prix, e'e: e'en, ie: première (A,R), ill: tortilla, oei: onomatopoeia (R), ois: chamois, eigh: Leigh (A,R), ille: ratatouille.

Total number of graphemic representations of the letter-name "e" /i/: 40

(3) **i**: The name of the letter "i" is the diphthong phoneme /ay/. This letter "i" (whose name is /ay/) represents the following phonemes: /i/: graffiti, /t/: it, /æ/: meringue, /ə/: animal, /a/: memoir, /ay/: wild, iCe: wide, /y/: view.

Total number of phonemic functions of the letter "i" /ay/: 8

The name of the letter "i" is the diphthong phoneme /ay/. This phoneme /ay/ is represented by the following graphemes: I: IQ, i: ideal, iCe: idle, y: by, yCe: cycle, **i**: hi /hay/, **y**: YMCA /way ɛ m si e/, ae: maestro, ai: aisle, ay: kayak, ei: heist, ia: diamond, ie: pie, ih: annihilate, ye: rye, oy: coyote, uy: buy, aii: Hawaiian /həweɪən/, ave: ave, eve: eve, igh: high, eigh: height, ailles: Versailles (treaty).

Total number of graphemic representations of the letter-name "i" /ay/: . . . 23

(4) **o**: The name of the letter "o" is the vowel phoneme /o/. This letter "o" (whose name is /o/) represents the following phonemes: /a/: odd, /t/: women, /ə/: purpose, /o/: old, oCe: whole, /ʔ/: off, /ʌ/: mother (A,R), /u/: do, oCe: move, /U/: woman, /w/: choir /kwaɪr/, and the phoneme-sequences /wʌ/: one /wʌn/ (A,N,R), /ə w/: egoism /ɛg əwɪzəm/.

Total number of phonemic functions of the letter "o" /o/: 13

The name of the letter "o" is the vowel phoneme /o/. This phoneme /o/ is represented by the following graphemes: a: cacao, O: SOS, o: no, oCe: note, u: Muhammadan, o': O'Neill, ô: Peron, ô: rôle, au: chauvinism, ew: sew, oa: soap, oe: toe, oh: oh, on: (filet) mignon, oo: door, os: appropos, ot: potpourri, ou: four, ow: own, ao: cacao, eo: yeoman, uo: fluoresce, xo: (Don) Quixote, o'e: o'er, hō: (maître) d'hôtel, ue: Puerto (Rico), aux: faux (pas), eau: bureau, hau: haute (cuisine), ogh: Keogh (plan), owa: towards, owe: owe, aoh: pharaoh, cou: Seoul, caux: Bordeaux, ough: though.

Total number of graphemic representations of the letter-name "o" /o/: 36

(5) **u**: The name of the letter "u" is a sequential combination of the semivowel glide phoneme /y/ and the vowel phoneme /u/, namely /yu/. This letter "u" (whose name is /yu/) represents the following phonemes: /ɪ/: busy, /ɛ/: bury, /ə/: awful, /ʌ/: but (A,R), /u/: truth, uCe: rule, /U/: put, uCe: sure, /o/: Muhammadan, /w/: quick. This letter "u" also represents the /yu/ phoneme-sequence, as in: UN, utilize, uCe: use, the /yU/ phoneme-sequence, as in: utility, uCe: cure, the phoneme-sequence /əw/: graduate and the phoneme-sequence /yəw/ in: arguable /ɑrgəwəbəl/.

Total number of phonemic functions of the letter "u" /yu/: 17

The name of the letter "u" is a sequential combination of the semivowel glide phoneme /y/ and the vowel phoneme /u/, namely /yu/. This phoneme-combination is represented by the following graphemes: U: USA, **U**: IQ /ay kyū/, **W**: YWCA /way dʌbəl yu si e/, u: cucumber, uCe: cute, ew: few, ou: coupon, ue: argue, ui: nuisance /nyʊnsɪs/, ut: debut, eu: euphemism, hu: humor, /yumər/, ju: Jugoslavia,

ou: Houston, uu: vacuum, yu: Yukon, yuCe: yule, uh: Fuhrer /fʏr r/ (N), ewe: ewe, hou: Houston /yʊst n/, ueh: Fuehrer /fʏr r/ (N), ugh: Hugh /hyu/ (R), eau: beauty, eue: queue, iew: view, you: you(th).

Total number of graphemic representations of the letter-name "u" /yu/: . . . 26

Statistics of the unlabeled single vowel letters

Sum total of phonemic functions of the five single vowel letters: **63**
 Average ratio of these five letters and their phonemic functions: **1:12.60**
 Sum total of graphemic representations of the five single vowel letter-names: . . . **160**
 Average ratio of their names and their graphemic representations: **1:32.00**

Summary

The *names* of the aforementioned five single unlabeled vowel letters discussed thus far are disguised by aliases on dual levels: (1) Each *vowel letter* functions in an average of 12.60 *phoneme* roles. (2) Each *letter-name* is symbolized -- on the average -- by 32.60 *different graphemes*.

Continuation

This in-depth analysis of selected English letter-names has also been conducted with all other names of the alphabet. All findings are similar. Their description, however, transcends the scope of this paper. Only specific complications will be recorded. Before that commences though, some speculation seems justified for the preceding survey of five letter-names which documents a perplexing dual-level representation. On one level, the representation of the letter name is active: each letter which bears a name represents a number of other different phonemes as well. The other level is passive: each letter-name is represented by a number of graphemes.

- 1) If each phoneme had a name, and
 - 2) if there were no more than one letter-name referring to each phoneme, and
 - 3) if each name's attribute (where an attribute is necessary) were descriptive of the represented phoneme's true nature,
- then there would be unequivocal fixed points of references which would reduce the ambiguity and confusion instead of adding to it.

Specified complications of English letter-names

Anonymous:

The following English phonemes cannot be identified with any unlabeled single letter-name of the English alphabet: /a/, /æ/, /aw/, /ɔ̃/, /ɛ/, /ə/, /g/, /ɜ/, /ɪ/, /ɯ/, /ʏ/, /ʉ/, /ʊ/, /ʌ/, /y/, /ɹ/. The grave consequences of this fact cannot be emphasized enough. Yet an exact enumeration and analysis of these "black holes" seems to be lacking in the available literature.

Total number of alphabetically anonymous (nameless) phonemes: 18

It would probably prove helpful if at least some digraphs were recognized as alphabetic units, each of them bearing a "digraph-name" whose name-giving component is the phoneme most often represented by that particular digraph. For example, the name of "ch" /sɪ eʃ/ could be /tʃi/, that of "sh" /s eʃ/ could be /ɛʃ/, the digraph "aw" /e dʌəl yu/ could be called /ɹ/, "ou" might be named /aʊ/, etc., even without any spelling reform. Similar concern is voiced by Downing and Leong

(1982:55), "...ambiguity which causes difficulty in phonics teaching is in the terminology for describing units of the writing system. Most English teachers call these units *letters* of the alphabet. But Spanish teachers...describe *ch* as 'a letter'."

Triple identities:

(1) The name-giving *consonantal components* of the following two letter-names are identical: "k" /*ke*/ = q /*kyu*/ and so is the first consonantal component of the name-giving consonant cluster of the letter x /*eks*/.

(2) The name-giving consonantal components of the following two letter-names are identical: "c" /*si*/ = s /*es*/ and so is the second component of the name-giving consonant cluster of the letter x /*eks*/.

Total number of letter-names with triple identities: 6

Double identities:

(1) The name-giving *consonantal components* of the following pair of letter-names are identical: "g" /*ji*/ = j /*je*/.

(2) The unlabeled name of the letter "i", /ay/ -- as it appears in the English alphabet -- is simultaneously the name-giving (and therefore main) component of the name /way/ of the letter "y."

Total number of letter-names with double identities: 4

Self-contradictory:

(1) The conventional "short a /e/" name of the phoneme /æ/ is practically a double self-contradiction since /æ/ is hardly ever short and most certainly neither an /e/ sound nor a close phonetic variant of /e/. The phoneme /æ/ is -- in most phonemic contexts -- definitely long. Compare, for example, the word pairs "grass" versus "grace," "past" (or "passed") vs. "paste," "man" vs. "main" (or "mane"), "dam" vs. "dame," "wag" vs. "vague," "glad" vs. "glade," and "plaid" vs. "played." Phonetically, the low front vowel /æ/ is two degrees removed from the upper mid front vowel /e/ in the vowel triangle.

(2) An analogous statement may be made about the "short o /o/" name of the phoneme /a/. As to the purported brevity implied by its label, compare, for example: "ah" vs. "oh," "ma" vs. "schmo" (or "moan"), "bra" vs. "pro" (or "row"), "saga" vs. "soak," "suave" vs. "wove," "yacht" vs. "iota," "bottle" vs. "boat," "bother" vs. "bolder," "cod" vs. "code," "doll" vs. "dole," and "honor" vs. "owner." Phonetically, /a/ is two degrees removed from /o/ in the vowel triangle, /a/ is completely unrounded and an undentable monophthong; /o/ is (at least) slightly rounded and (at least) a partial diphthong.

(3) The "short o /o/" name of the phoneme /ɔ/ is another contradiction since /ɔ/ is so consistently long that even Cummings (1988:206) admits, "...there are problems with calling /ɔ/ a short vowel. It is at best a tentative classification." Phonetically, /ɔ/ is also quite distinct from /o/, as can be judged by comparing "awning" with "owning," "brought" w. "wrote," "caught" w. "coat," "fault" w. "fold," "saw" w. "sow" (or "sew"), "call" w. "coal," for instance. (The distinction is slight only in few exceptions, e.g. where /ɔ/ occurs between /w/ and /r/, such as "war," "wart," "wharf".)

(4) Of course, it is also a contradiction to give two different vowels, /a/ and /ɔ/, the same name, "short o /o/:" -- a confusing contradiction, indeed. Cummings (1988:203) makes a phonetically valid distinction by calling /a/ "low short /o/" and /ɔ/ "high short /o/." But he must admit the disturbing phonetic ramifications of such nomenclature (1988:204-206 and 231-240). It is an even greater problem from the viewpoint of literacy learning to call /ɔ/ and /a/ "high" and "low" (adding to the blatant inaccuracy of calling these long vowels "short").

(5) Assigning the name "short u /yu/" to the low central vowel phoneme /ʌ/

is also a serious phonetic contradiction. The distinct rounded upper high back vowel quality of /u/ and the low central vowel quality of /ʌ/ should be enough to discourage using identical names for two vowels with such different sound qualities. The difference between the vowels in "boot" /but/ and in "but" /bʌt/ cannot be minimized. Compare, for example, "cup" vs. "coop," "dumb" vs. "doom," "gun" vs. "goon," "skull" vs. "school," "nun" (or "ngne") vs. "noon," "does" vs. "dues".

(6) The difference between /u/ and /U/ is admittedly less obtrusively evident, yet it is still a contradiction to use the name "short u /u/" for /U/, the unrounded vowel which is one degree lower. The phonetic dichotomy between /u/ and /U/ is distinct enough. Comparing "cook" with "kook," "look" with "Luke," "full" with "fool," "soot" with "suit" probably illustrate it lucidly enough.

(7) The concern voiced in point (4) about the identical name assigned to two different vowels, /a/ and /ʌ/, is equally applicable to the "short u /yu/" name used for the phonemes /ʌ/ and /U/. The criticism of Cummings' nomenclature (here "low short u /yu/" -- namely /ʌ/ in such words as "but" /bʌt/ -- versus "high short u /yu/" -- namely /U/ in such words as "book" /bʊk/ -- (Cummings, 1988:203 and 241-243)) is applicable.

(8) Of course, the name "short e /i/," conventionally used for the phoneme /ɛ/, is a self-contradictory misnomer too. The two-degree difference between the upper high front vowel /i/ and the lower mid front vowel /ɛ/ is a serious reason not to call these two vowels by the same name even if the attribute "short" fits. Word pairs such as "eagle" vs. "egg," "equate" vs. "equity," "deed" vs. "dead," "geese" vs. "guess," "keep" vs. "kept," "read" vs. "red" sound convincing enough to exemplify the dichotomy between /i/ and /ɛ/.

(9) The "short i /ay/" name of the phoneme /ɪ/ is also double misnomer: /ɪ/ is neither a diphthong nor does it contain either the /a/ component of the diphthong /ay/ or its /y/ glide. Comparisons between "djm" and "dime," "gill" and "guile," "kit" and "kite," "miss" and "mice," "pill" and "pile," "rid" and "ride," "sick" and "psych" are probably convincing enough to make the point.

(10) Double self-contradiction characterizes the "double u /yu/" name of the letter "w" /dʌbəl yu/ too. In no way does "w" ever represent either the semivowel glide /y/ or the vowel /u/. Only its printed graphic shape is double, but by no means a double "u" /yu/ but rather a double "v" /vi/. (consequently, the name "double u" unintentionally implies that the letter "v" is the letter "u".)

Total number of self-contradictory names: 10

Unidentifiable:

Neither component of the name /eč/ of the letter "h" is suggestive of any of the phonemes which the letter "h" can represent either by itself or as a component of a digraph:

(1) The name "th" /tɪ eč/ in no way reminds the literacy learner of either the phoneme /θ/ or the phoneme /ð/. In addition, it should be emphatically pointed out that the same quasi-name is used to designate both /θ/ and /ð/.

(2) The irrelevance of the name "sh" /ʃ s eč/ for /ʃ/ is patently obvious when it is considered for its phonemic appropriateness.

(3) The irrelevance of the designation "ch" /ʃɪ eč/ of /č/ also becomes obvious.

(4) The name "schwa" of the phonetic device, /ə/, is of no useful aid to the literacy learner.

Total number of unidentifiable names: 6

Misleading:

(1) The name /kyu/ of the letter "q" is misleading in a peculiar way. The /yu/ segment of the triple phoneme string /kyu/ seems to imply that a subsequent letter

"u" /yu/ is an integral part of the letter "q" itself, whereas the letter "u" /yu/ is only a usual (but by no means constant) sequential companion to the letter "q." Yet the name /kyu/ makes it hard to realize that the letter q by itself represents only the phoneme /k/ in such vocabulary items as *coq au vin*, *Quran* /kəˈræn/ (or /kʊˈræn/) and most frequently in the names *Iraq* and *Iraqi*.

The graphemic fusion of the letters "q" and "u" into digraphs in such words as "*quiche*, *bouquet*, *mosquito*, *etiquette*, *conquer*, *mannequin*," and of the trigraph "*que*" in such words as "*technique*, *unique*, *plaque*, *grotesque*, *discotheque*" and of the trigraph "*cqu*" in such words as "*racquetball*, and *lacquer*" heightens concern regarding the misleading role of the name /kyu/.

(It is interesting to note that *Webster's New World Dictionary* (1988) has included an apparently novel American spelling of "barbecue" - namely, "*barbeque*" - in which the /kyu/ phoneme string appears in its entirety.)

(2) Perhaps even more misleading is the /yu/ name of the letter "u" because it unmistakably implies that the phonemes /y/ and /u/ are indivisibly fused into a phonemic unit. However, the phoneme /u/ by itself (without the /y/ glide) is in fact more numerous in the lexicon by the letter "u" and /u/ occurs more frequently in running texts (represented by the letter "u") than the phoneme string /yu/.

(3) The same criticism also holds true for the letter-name "*short u* /yu/," i.e. the /yU/ phoneme string in such words as "*unique*, *utopian*, *during*, and *museum*." This /yU/ phoneme string occurs in decidedly fewer words lexically and less frequently in running texts than the single /U/ phoneme in such words as "*bush*, *full*, *push*, *put*, *sugar*, *judicious*, and *intuition*."

(4) The letter-name /way/ of the letter "y" is unmistakably suggestive of the semivowel glide /w/. Throughout literacy instruction, the letter "w" is treated as a consonant, although it is also listed as part of the vowel group: ("a, e, i, o, u, and sometimes y and w.") Thus the impression made upon the unsophisticated mind of the literacy learner is likely to be that the name-giving component of /way/ is /w/. That is, of course, misleading since the letter "y" never represents the phoneme /w/.

(5) The confusion caused by the fact that the phoneme /g/ has no representation in the nomenclature of the letters of the alphabet, but the phoneme /j/ is doubly represented by the letters "g" and "j" -- /j/ and /je/ -- is aggravated by calling /g/ "hard" and /j/ "soft." In addition to using the purely impressionistic terms "hard" and "soft," any distinction between the concept of letters and speech sounds becomes even more blurred.

Total number of misleading names: 6

Misrepresentative:

(1) The letter-name /zi/ can hardly be considered representative of the phoneme /z/ in English because the letter "s" /s/ is at least three times as often the symbol of the phoneme /z/ as is the letter "z" /zi/. Vocabulary items in which the phoneme /z/ is spelled with an "s" abound in the lexicon (e.g. *as*, *is*, *his*, *was*, *disease*, *enthusiasm*) and they occur even more frequently in running texts because of innumerable plural noun suffixes and third person singular verb endings (succeeding vowels and voiced consonants).

(2) Both the triple representation of the phoneme /k/ by the letter-names (*ke*, *kyu*, *eks*) and the similar triple representation of the phoneme /s/ by the letter-names (*es*, *si*, *eks*) are further complicated by the fact that the letter "c," whose name is /si/, is actually more often the symbol of the phoneme /k/ than of the phoneme /s/, in spite of its name /si/. Such words as "*case*, *can*, *care*, *car*, *call*, *cold*, *cool*, *cube*, *clinic*, *conclude*, and *conduct*" are more numerous lexically as well as more common in running textual occurrence than such words (and names) as "*cent*, *Cecil*, *cease*, *cinch*, *cider*, *certain*, *regent*, *reciprocity* and *peace*."

(3) The double representation of the phoneme /j/ is the consonantal name-giver of the letter "g" /j/ and of the letter "i" /ie/. This double identity is complicated by the circumstance that the letter "g" /j/ is demonstrably more often the written symbol of the phoneme /g/ (which has no direct representation among the letter-names of the English alphabet) than of the phoneme /j/ (which is conjured up by the letter name of "g" /j/. (Words such as "gate, gag, gall, garb, get, giggle, girl, go, golf, good, gum, egg, eagle, bag, big" are more numerous and more used than words such as "gem, ginger, giant, gym, aging, magic, legible, digit, engine and logic.")

Sum total of misrepresentative letter-names: 3

Sum total of letter-names that earn the designation "misnomers": 53

Concluding observations

The necessity of this tedious analysis of the excessive number of inconsistencies among English letter-names would perhaps best be illustrated by listing a few frequent words among whose letters there is not a single one whose name reflects the phoneme it represents:

as, is, of, has, his, was, who, how, they, with, egg(s)*, cow(s)*, wash, gosh, shoe(s)*, wing(s)*, young, shush, thug(s)*, Czech, houses*, thing(s)*, cough, whoosh, cause(s)*, Hawaii, catch(es)*, wish(es)*, quiche(s)*, choos(es)*.

Immediate consequences

Some immediate consequences of the inefficiency and difficulty caused by all the factors analyzed thus far can be briefly mentioned:

(1) A disproportionate and inordinate amount of time must be spent on teaching reading, writing and spelling every day for the first few years of schooling. Spelling lessons continue through at least sixth grade.

(2) Slow progress in reading acquisition: it takes years of elementary education to enable the *average* learner to flawlessly decode any text on his/her own cognitive level.

(3) Unobstructed composition writing on the learner's cognitive level (transposition of thoughts into written text) is feasible in the lower grades only if one is willing to forgo conventional spelling in the interest of self-expression. The question remains as to how, when - and especially if - this deficit will ever be made up. A most recent, insightful article (Levin, 1989:498) concludes:

As a result of the poor fit in English, most adults who have gone through years of schooling still misspell many familiar words or confuse homophones, unless they take the trouble to look them up, and they blunder in pronouncing unfamiliar book-words.

(4) Lack of proficiency and slow progress in decoding script on one's cognitive level inhibits reading of texts in every school subject. The inevitable consequence is slowed progress in all areas for which reading is the main avenue of learning.

(5) Effective foreign language teaching is delayed until high school because of lack of attainment in English reading and spelling proficiency.

(6) Even on the high school level, foreign language learning is hampered by factors stemming from the characteristics of English orthography. Foremost among them is a fundamental uncertainty in distinguishing and identifying phonemes and making connections between them and their various possible English graphemes. This uncertainty begins in early literacy acquisition and

persists. It fosters hazy ideas and often causes great confusion in what should be a firm grasp of the elementary phonology of one's native language. There is an unavoidable carry-over and multiplication of this uncertainty in the acquisition process of any foreign language.

CONCLUSION

The beginning of literacy acquisition should, ideally, offer the learner as consistent and reliable a frame of reference from which to proceed as possible. The earliest stages of reading instruction include learning the letters of the alphabet and their names. As has been shown, the criterion of equivalence between the symbolized entity, its symbol and the symbol's name has not been consistently met for English orthography.

Confusion in the earliest stages of reading can bring about early disorientation which can lead to an ever-twisting downward spiral of failure.

FINNISH LETTER-NAMES

1.	a	/a/	15.	o	/o/
2.	ä	/æ/	16.	ö	/œ/
3.	b	/be:/	17.	p	/pe:/
(4.	c	/tse:/)	(18.	q	/ku/)
5.	d	/de:/	19.	r	/er/
6.	f	/ef/	20.	s	/es/
7.	g	/ge:/	21.	t	/te:/
8.	h	/ho:/	22.	u	/u/
9.	i	/i/	23.	v	/ve:/
10.	j	/yt:/	(24.	x	/æks/)
11.	k	/ko:/	25.	y	/ue/
12.	l	/el/	(26.	z	/tset/)
13.	m	/em/	(27.	š	/es/)
14.	n	/en/	(28.	ä	Swedish /o/)

Each Finnish vowel's name is identical with the phoneme it consistently represents. The only exception is the letter "i." In perfect complementary distribution in word-final ...Vi and median ...ViC... position, "i" represents /y/, e.g. aj, ej, voj, hajku, häiliä, leivo, oikeyn, töintuskin, tuike. In any other position the letter "i" signifies /i/.

Each Finnish consonant's name-giving consonantal component bears the same name as the phoneme it consistently represents. (The existence of the velar nasal, /ŋ/, is not made conscious during literacy instruction. Since /ŋ/'s occurrence is conditioned by an immediately successive velar /k/ or /g/, it is in complementary distribution with the postdental-alveolar /n/ and is represented by this letter "n" and its letter-name, /en/.)

Letter-names 4., 18., 24., 26., 27., 28. have been put in parentheses in order to indicate that these letters represent phonemes which are not an integral part of any truly Finnish words. These letters occur only in few foreign words which are consciously used -- or rather, quoted -- as foreign words. The letters "q" and "x" are used even more frequently in mathematics and physics as pure symbols.

HUNGARIAN LETTER-NAMES

1. a	/ɒ/	23. ny	/æ̃/ = /æ̃̃/
2. á	/a:/	24. o	(short) /o/
3. b	/bɛ:/	25. ó	(long) /o:/
4. c	/tʃɛ:/	26. ö	(short) /œ/
5. cs	/tʃɛ:/	27. ő	(long) /œ:/
6. d	/dɛ:/	28. p	/pɛ:/
7. dz	/dʒɛ:/	29. q	/ku:/
8. dzs	/jɛ:/	30. r	/æ̃/
9. e	/æ/	31. s	/æ̃/
10. é	/e:/	32. sz	/æ̃/
11. f	/æ̃/	33. t	/tɛ:/
12. g	/gɛ:/	34. ty	/tɛ:/ = /tʃɛ:/
13. gy	/dʒɛ:/ = /dʒɛ:/	35. u	(short) /u/
14. h	/hɑ:/	36. ú	(long) /u:/
15. i	(short) /i/	37. ü	(short) /yɛ/
16. í	(long) /i:/	38. ü	(long) /yɛ:/
17. j	/jɛ:/	39. v	/vɛ:/
18. k	/ka:/	40. w	(double) /vɛ:/
19. l	/æl/	41. x	/lks/
20. ly	/æl-ipsilon/	42. y	/ipsilon/
21. m	/æ̃/	43. z	/zɛ:/
22. n	/æ̃/	44. zs	/zɛ:/

General consistency

Each Hungarian vowel's name is identical with the phoneme it consistently represents.

Practically each Hungarian consonant's name-giving consonantal component bears the same name as the phoneme it rather consistently represents. This includes the consonantal digraphs, cs /tʃɛ:/, dz /dʒɛ:/, gy /dʒɛ:/ (= /dʒɛ:/), ny /æ̃/ (= /æ̃̃/), sz /æ̃/, ty /tɛ:/ (= /tʃɛ:/), zs /zɛ:/ and the only trigraph dzs /jɛ:/ (There are no vowel digraphs or trigraphs.) From the moment of their creation, all digraphs and the one trigraph have functioned as graphemic symbols for one phoneme each. This is why each digraph (and the one trigraph) is identified by one letter-name. Consequently, each graphemic unit is conceived of as an alphabetic unit, i.e. *one letter*. (This concept can be highlighted by the following analogy: Although the word "scissors" has a plural grammatical form in English, all native speakers construe the plurality of the form to mean a singular object in reality.)

A similar view is reported by Downing and Leong (1982:55), "...Spanish teachers...describe ch as 'a letter,' although most American reading teachers would say they are 'two letters'."

Iconic markings and names: Each Hungarian letter representing a long vowel phoneme is marked by either a long slash diacritic (such as "á, é, ó, ú") or by a diacritic consisting of two long slashes (such as "ö, ü"), clearly indicating sound length and the names of these vowels are consequently, "long /o:/, long /u:/, long /œ:/, long /yɛ:/". The phonemes of "á" /a:/ and "é" /e:/ have no short variants and thus their names need no labels. (The short vowel phonemes "a" /ɒ/ and "e" /æ/ are phonetically different from "á" /a:/ and "é" /e:/ respectively.)

Special consistency: As implied above, the *high rounded back vowel* /u/ has two representations. Its short variant is represented by the unmarked letter "u" (named "short /u/") and the long one, /u:/, by the same letter "u" with a long slash

diacritic above it: "ü" (called "long /u:/," as stated above). With phonetic consistency, the *high rounded front vowel* is represented by essentially the same letter "ü." Its short variant /ʊ/, is marked by a two-dot diacritic: "ü̈," called "short /ʊ/," and the long one marked by two long slashes: "ǖ," called "long /u:/."

A similarly close phonetic relationship is consistently observed between the *rounded lower high back vowel* variants /o/ and /o:/, their letters "ö" and "ȫ," and their letter-names, "short /o/" and "long /o:/," on the one hand; and between the *rounded lower high front vowel* variants /œ/ and /œ:/, their letters "ö̈" and "ȫ̈," and their names, "short /œ/" and "long /œ:/," on the other hand.

Exceptions from these observations

(1) *Acceptable anonymity*: The velar nasal phoneme, /ŋ/, has no recognized alphabetical existence. It occurs exclusively before the velar stops /k/ and /g/. It is in complementary distribution with the dental nasal, /n/, and is represented by it.

(2) *Limited double identity*: The "y" /ipsilon/ letter's name-giving initial phonemic component, /i/, is identical with the name of the vowel letter "(short) i." This letter "y" /ipsilon/ represents the phoneme /i/ exclusively in ancestral family names of former nobility and only in word-final position.

(3) *Unidentifiable*: Neither component of the digraph "ly" /æ-l-ipsilon/'s name is suggestive of the phoneme /y/ represented by it. Fortunately, "ly" is used in words not exceeding 50, most of which end in ...*aly* /a:y/, (e.g. "kir^ály, hom^ály, tart^ály, ap^ály).

(4) *Out of use*: Letter-names 29., 40. and 41. have been put in parentheses in order to indicate that these letters are used in extremely few foreign words and names and even fewer loanwords. In most loanwords "x" is transcribed as "ksz" /ks/, e.g. "boksz" (for English "box") *szekszepil* (for "sex appeal") and "qu" as "kv" /kv/ e.g. *kvartett*, *kvintett* (for "quartette" and "quintette" respectively). The letters "q" and "x" are used more frequently in mathematics and physics and the sciences which employ them.

(5) Addressing many, mostly regular and therefore perfectly predictable, exceptions caused by consonant assimilation is beyond the scope of this paper.

Immediate consequences

(1) Letter-names, unambiguous as they are in Finnish and Hungarian orthography, play a substantially less important role than in English literacy instruction.

Initially, graphic shapes of the letters are identified with the speech sounds (=phonemes) *only*, without their letter-names. In other words, *only two symbolic systems* are connected:

- (a) the by then deeply embedded *phonemic symbols* of the language
- (b) and their *graphemes*.

No intermediary symbolic system, namely that of letter-names, is injected. Immediate sound-symbol identification of one phoneme after another is gradually attained and their decoding and encoding is soon practiced with ease.

(2) Fluent and flawless reading for meaning of any text on the learner's cognitive level is the gratifying result by the end of the first school year.

Letter-names are learned during the second or third school year and they are internalized easily because of their practical identity with the phonemes they represent. Letter-names are, of course, not conceived of as an intermediary or an auxiliary symbolic system designed to aid in literacy acquisition.

Letter-names are rather:

- (a) a practical device for dictating (and receiving the dictation of)

such sections of ancestral family names which are spelled according to obsolete orthographical conventions* and of foreign names encountered mainly in geography, history, and current global affairs,

(b) a technical device for alphabetical sequencing of words and especially names.

(3) Unobstructed composition writing on the learner's cognitive level meets with success even in the lower grades and it is constantly enriched by free time reading. In addition to their own children's literature, children's classics by authors such as Charles Dickens, Mark Twain and James Fenimore Cooper are read in translation by Finnish and Hungarian children 2-3-4 years earlier than their originals by children in English-speaking countries.

(4) A very high degree of proficiency in decoding script on one's cognitive level facilitates learning from texts in every school subject. The natural result is unrestricted progress in all areas.

(5) Effective foreign language teaching commences in fifth grade. By the time the equivalent of American high school is reached, two -- and in many academic high schools three -- foreign languages are studied. Steady progress is ensured by having laid firm foundations in literacy in the learner's native language, based on lucid concepts of phonemes, graphemes and their names.

CONCLUSION

The scenario is basically different for orthographies which consistently map sound and symbol and link them just as consistently with the symbol's name, satisfying the criteria for efficient symbolic systems. Reading acquisition can be (and is, with very few exceptions) (1) efficient, (2) fast, (3) productive, (4) enjoyable and (5) readily transferable to the successful study of foreign languages.

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* E.g. "We write [the name] *Rákóczi* with 'cz' /tsc: ze:/ -- [the name] *Kossuth* with 'ss' (two /æš/s) and 'th' /tɛ: hɑ:/ and [the name] *Teleky* with 'y' ([an /ipsilon/])."

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PHONOLOGY AND PHONETICS

COMPENSATORY LENGTHENING: NONLINEAR AND DYNAMIC ANALYSES

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Compensatory Lengthening in the Segmental Tradition

In historical linguistics, compensatory lengthening has traditionally been described in terms of discrete phonemic segments in their left-to-right order. For example, Arlotto (1972:88) provides the following definition:

A particular type of change related to both vowels and consonants is the process known as compensatory lengthening. This situation involves a vowel which is followed by two consonants; when one of the consonants is dropped, the vowel is lengthened in compensation for the lost phoneme. In formal terms, compensatory lengthening is usually expressed as follows:

$$VC_1C_2 \rightarrow \bar{V}C_2$$

For example, Germanic finf /finf/ 'five' changed in Old English to fif /fi:f/ through compensatory lengthening. In terms of consonant and vowel phonemes, this could be described as follows:

$$\begin{array}{ccc} CVC_1C_2 & \rightarrow & C\bar{V}C_2 \\ \text{f i n f} & & \text{f i:f} \end{array}$$

This description of the change provides the "before and after" stages -- the phonemic structure of the word in one synchronic stage and in a subsequent synchronic stage. It does not, however, provide an analysis of the process itself.

For the analysis of the process, a process-oriented approach such as generative phonology may provide some insights. Positing one structural change at a time, the entire phenomenon can be described as the deletion of the /n/ and the compensatory lengthening of the /i/, as follows:

$$\begin{array}{l} C \rightarrow \emptyset / \begin{bmatrix} -\text{cns} \\ +\text{voc} \\ +\text{tns} \end{bmatrix} \begin{bmatrix} \text{---} \\ +\text{nas} \end{bmatrix} \begin{bmatrix} +\text{cns} \\ -\text{voc} \\ +\text{cnt} \\ -\text{vcd} \end{bmatrix} \# \\ \\ V \rightarrow [+tns] / \text{---} \begin{bmatrix} +\text{cns} \\ -\text{voc} \\ +\text{nas} \end{bmatrix} \begin{bmatrix} +\text{cns} \\ -\text{voc} \\ +\text{cnt} \\ -\text{vcd} \end{bmatrix} \# \end{array}$$

This approach does provide some insight: The deletion of /n/ preceding the lengthening of /i/ in the derivation of the word implies a cause-and-effect relationship between the two rules. However, the same implication is found in the very term itself -- compensatory lengthening. Furthermore, Lehmann (1973:155-56) compresses the two rules into one, resulting in nothing more than the following feature-based generative rendition of the original inadequate phonemic statement:

$$[-\text{cns}][+\text{nas}] \rightarrow [+ \text{tns}] \emptyset / \text{---} \begin{bmatrix} -\text{res} \\ +\text{cnt} \\ -\text{voice} \end{bmatrix}$$

Moreover, the generative rules merely account for a method of changing one string of phonemes to another. They do not provide a justification for the change itself. Indeed, the same results can be accomplished through a rule changing /n/ to /i/, as follows (dispensing with the features for clarity and space):

$$n \rightarrow i / f i \text{ --- } f$$

Although /fiif/ is a viable alternative to /fi:f/, a rule changing a nasal consonant into a high front vowel is suspect. While it does describe the effect of the change, it offers no insight into the process of the change.

Segmental attempts to explain the process of compensatory lengthening are futile, for the process affects the structure of the syllable, not simply the sequencing of consonants and vowels. Hence, we should examine nonlinear approaches to phonology -- approaches that do not rely upon discrete phonemic segments in progression from left to right.

Nonlinear Approaches

Typical of the nonlinear approaches, metrical phonology uses the syllable as the organizational structure. This approach should thus reveal the process behind the historical change of compensatory lengthening.

In the framework of metrical phonology, this problem is analyzed by Lass (1984:259-60) as in figure 1. Certainly, the organizational structure of the syllable changes in the process of compensatory lengthening. But the change in syllable structure reveals no insight into the process at all -- it merely reflects the change in discrete phonemic segments in left-to-right order.

The only difference between the metrical analysis and the traditional phonemic analysis is that the metrical consonants and vowels occupy the final node positions of tree diagrams. While the tree diagrams purport to reveal insights into the change, they account only for the position of the segments before and after the change, which remarkably parallels the linear segmental strings in the two generative rules above. Nothing in the process of change itself is explained or even accounted for by the trees.

While it does provide significant insights into metrical matters of accentuation, as in the perspicuous work of Giegerich (1985), metrical phonology can offer little aid in matters relating to the internal organi-

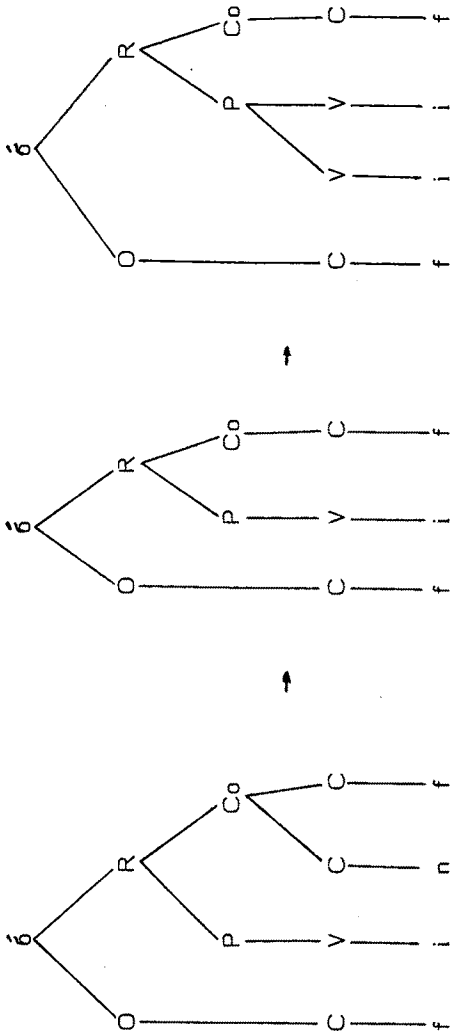


Figure 1: Metrical Analysis (from Lass 1984:260)

zation of the syllable, for this internal organization is defined and determined by the discrete sequential phonemes.

The problem with all current nonlinear models is that the structure of the syllable is dependent upon the linear sequencing of consonants and vowels. This has been evident from the earliest work in the field of prosodic analysis, in which Firth (1948) structures the syllable into prosodies that relate to phonematic units in discrete linear progression. Indeed, the latest work within this tradition perpetuates the dominance of the phonematic unit, although augmented by the relational tree diagram. For example, Fudge (1987) debates the various organizational structures of the tree but ultimately defines the type of tree by the number and sequence of consonant and vowel phonemes being related. For the same reasons, autosegmental phonology -- while it may offer insights into such intersyllabic phenomena as vowel harmony (compare Goldsmith 1985) -- offers no significant new insights into such intrasyllabic phenomena as compensatory lengthening.

Current nonlinear approaches fail to account for the process of compensatory lengthening because their syllabic structure is dependent upon the discrete phonemic segments in left-to-right sequential order. For any insight into the problem, we need to examine the actual phonetic organization of the syllable, such as is done in dynamic phonology.

The Dynamic Approach

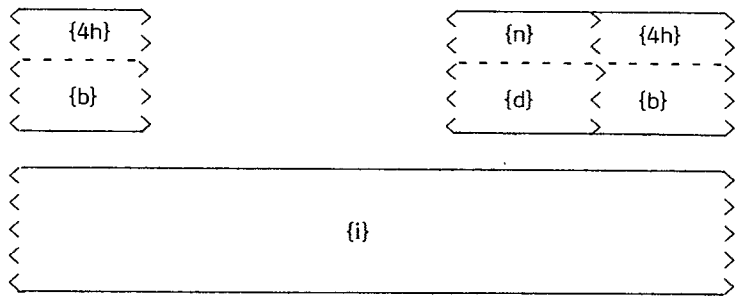
Dynamic phonology is a structural/functional model constructed from modern dynamic phonetic evidence, in which the features of speech are organized directly into a syllabic frame without the extraneous abstraction of segmentation. The basis for the syllabic organization of features is derived from the work of such dynamic phoneticians as Mermelstein (1973), and a description of the model and its application to numerous analyses has been presented in Griffen 1985.

In the speech continuum, the consonantal obstruction features are produced in coarticulatory constraint upon the vocalic syllable features, as described over a decade and a half ago in the articulatory model of Mermelstein (1973:1081-82).

With the features organized into the syllabic frame of dynamic phonology, a schematic of the change from *finf* to *fff* can be represented as in figure 2. The letters within braces stand for the following features: {b} is the labial position of obstruction, {d} is the alveolar position of obstruction, {4h} is the degree of aspiration resulting in frication and total suppression of voice, {n} is nasality, and {i} is here a combination of the high and front vocalic (or syllabic) features. Of course, these features do not begin and end in tandem, a fact represented by the jagged lines.

When the nasal obstruction was lost in the syllable, the durative length of the syllable remained constant. As can be seen in figure 2, this loss of the nasal resulted in a segmental illusion -- the "pure" unobstructed portion of the vowel in stage 1 was perceived for a shorter period of time than the corresponding portion of the vowel in stage 2. In the segmental perception of this portion as the vowel itself, the vowel "lengthened" in compensation for the loss of the nasal.

Stage 1



Stage 2

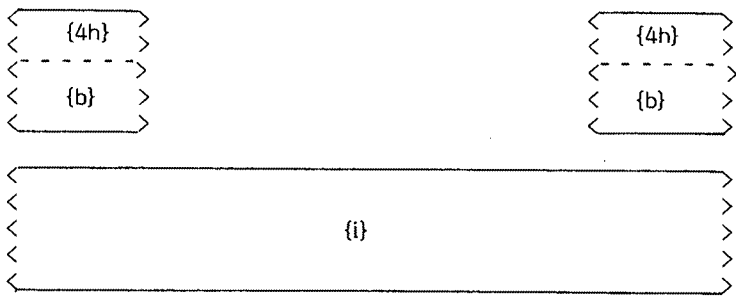


Figure 2: Dynamic Analysis

Dynamically, however, the durative length of the entire syllabic vowel -- the obstructed and unobstructed portions -- remained the same. The only change was the loss of the nasal obstruction in the final cluster. Compensatory lengthening can thus be explained as the loss of a consonantal obstruction in a syllable of constant durative length.

When viewed dynamically, the process of change traditionally described as compensatory lengthening can indeed be accounted for. Since nothing happens to the length of the vowel, however, the basic issue of compensatory lengthening -- how the vowel lengthens in compensation for the loss of the consonant -- is vacuous, for the entire vowel does not lengthen. Thus, there is no such thing as compensatory lengthening -- it is merely an illusion derived from interpreting the vowel segmentally as only its unobstructed portion.

Conclusion

In segmental analysis, a change in the length of the vowel is perceived, but the process of change can be accounted for only through ad hoc descriptions of the conditions before and after the change. When the nature of speech sound as a system of dynamic coarticulatory constraint is taken into account, however, there is no lengthening of the vowel in compensation for the loss of a consonant in a syllable of constant duration. Thus, while the segmental analysis is at a loss to account for the underlying motivation for the alleged change that it in essence creates, the dynamic analysis provides an explanation for the phenomenon perceived by the segmentalist.

If the efficacy of a method of phonological analysis is determined by its ability to provide insights into phonological processes and phenomena, then surely the dynamic method should be preferred over the segmental, for dynamic phonology can even account for changes perceived in phonology by the imposition of segmental criteria but not explicable by segmental methods.

Moreover, the nonlinear approaches to phonology, often touted as nonsegmental, are in fact nothing more than the imposition of prosodies or long components (compare Harris 1951:125-49) and/or of tree diagrams upon the traditional segmental description. While they may provide insights into metrical relationships between syllables (such as accentuation), they add nothing to our knowledge of phonology within the organizational structure of the syllable, for they perpetuate the linear, segmental view of speech sound.

Dynamic phonology is so far the only method of phonological analysis that analyzes phenomena nonsegmentally -- by organizing features directly into a syllabic frame. It is accordingly the only method of phonological analysis that can account for such phenomena as compensatory lengthening as they exist in the speech continuum, not in the fictitious phonemic abstraction.

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ACQUISITION BY FRENCH SPEAKERS OF THE ENGLISH VOICING FEATURE IN WORD-INITIAL POSITION

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1. INTRODUCTION

At first glance the acquisition of English *ptk* and *bdg* should hardly present a problem for French speakers, since they exist also in French and are usually contrasted with the phonological feature + or - [voice] in both languages. A look at the phonetic realization of these pairs, however, reveals that the phonological distinction covers a number of articulatory and acoustic differences. While these do not hamper communication, they do contribute to the perception by native speakers of a foreign accent in the speech of even advanced French non-native English speakers.

While actual voicing (glottal pulsing) during closure is usually present in the realization of the French *bdg* series (except in contexts of assimilation), it occurs only in intervocalic position with any frequency in English. In initial position, especially under stress, English *bdg* are mostly voiceless for most speakers, although some American English speakers have been found to produce some or even all of their initial [+voice] stops with prevoicing, depending on a number of conditioning factors (e.g. Lisker and Abramson 1964, Flege and Brown 1982, Keating et al. 1983).

Initial *ptk* in English are usually aspirated, which manifests itself by a rather important voicing lag or delay (35+ ms) following the release burst, while in French they are unaspirated, with a much smaller lag (less than 35 ms of voice onset time) or no delay at all.

The only acoustic aspect of the contrast between word-initial English *ptk* versus *bdg* as it is acquired by French speakers that has been studied to any extent is the voice onset time (VOT), or aspiration, of the voiceless series. It has been found that, with long enough exposure to English, French speakers learn to produce in stressed position a VOT that is intermediate in duration between that of monolingual French and English speakers. The acquisition of the other aspects of the English contrast have not been investigated previously.

While the study of the acquisition of a single parameter is interesting in its own right, it does not take into account the fact that these parameters interact to create a very different global temporal organization between the two languages, which has to be mastered to achieve native fluency. Besides VOT, it was therefore decided for the present study to examine the duration of the stop closure phase, which is directly correlated with the amount of VOT (in English *bdg* have a longer closure than *ptk*; the opposite pertains for French); to determine the percentage of voiceless *bdg* (much higher in English), of voiced *bdg* (much higher in French), and the duration of the voiced or voiceless closure interval in less than fully voiced or voiceless stops.

Among the questions asked at the outset are the following: Is there a particular order of acquisition of the phonetic parameters involved? Is the acquisition gradual or not? If there is an order of acquisition, is it the same

for all learners or is there individual variation, one speaker being more sensitive to one dimension and therefore acquiring it first, while another is more responsive to a different one?

2. METHODS

2.1. Subjects

Fourteen subjects were used: five English and five French monolingual speakers and four French-dominant French-English bilinguals. The English monolinguals are all from Columbus, Ohio; the French monolinguals from Paris. The bilinguals can be qualified as advanced bilinguals, since their experience of English varied between six and eleven years of formal training in France, plus (except for speaker OF) between ten and twenty years of residency in the U.S. at least five of which in Columbus, Ohio. OF has only spent five years in the U.S., but went from the age of six till eighteen to a bilingual French/English school in Paris, where history and geography were taught entirely in English by native speakers. The bilinguals' English profile is summarized in (1). The English speakers are all from the lower middle class and in their early thirties; the French monolinguals likewise and in their early twenties. The bilinguals are from the upper middle class, are in their thirties (except MB, in her forties), and all have graduate university degrees.

(1) *Bilinguals' English Language Profile:*

Speaker:	MM	PW	MB	OF
Years in High School (France):	8	7	6	7(+5)
Years in College (France):	3	3	0	4
Years in the U.S.:	17	18	20	5
American/French spouse/partner:	A	A	F	A
Use of English/French at work:	F	E	F	E
Use of English/French at home:	E	E	F	E

2.2. Test materials

Two sets of minimal pairs of monosyllabic words were used as corpus (originally constructed for a study on vowel length before voiceless versus voiced stops, see Laeuffer 1989 and forthcoming). The subcorpus used here contained at least one word pair starting with *ptk* and one starting with *bdg* (except for *g*). It is reproduced in (2).

The stimuli were inserted in a similar frame sentence in each language, in which they occurred medially under focus, as in answer to the question: *What shall I yell at Mary?/Que dois-je dire à Marie?* The original data in each language contained in random order (interspersed with other words not used here) five tokens of each of the test words in the frame sentence. An additional recording of five tokens was made with the English monolinguals. The bilinguals had not been recorded previously and thus read ten tokens of each word. No additional recording could be made with the French monolinguals for whom only five tokens of each word were thus available.

(2) *Stimuli*:

a) words:

English

1a. bock	b.bog
2a. tap	b.tab
3a. caught	b.cawed
4a. dose	b.doze
5a. moat	b.mode
6a. peck	b.pcg
7a. sheet	b.shc'd
8a. -	b.gag

French

1a. bac	b.bague
2a. tempe	b.tombe
3a. cotte	b.code
4a. douce	b.douze
5a. monte	b.monde
6a. bec	b.bègue
7a. gîte	b.Gide
8a. -	b.gag

b) frame:

Yell '___ at Mary.

Dis '___ à Marie.

The instruction to read the sentences at a normal rate of speech and as naturally as possible was given at the top of the first sheet in the appropriate language. The English speech materials were recorded in a sound treated room in the Ohio State Linguistics Laboratory. The French monolinguals were recorded at the Institut d'Etudes Linguistiques et Phonétiques of the Sorbonne Nouvelle (Paris III).

2.3. Analysis

All sentences were digitized with a sampling frequency of 10KHz and an A/D resolution of 12 bits on a DT2801-A data acquisition board to obtain the corresponding sound waves. A waveform editor was used to analyse the visual and auditory displays from which the durational measurements were made, using the standard criteria for segmenting the stops from the preceding /1/ of *yell* or /i/ of *dis* and from the following vowel.

3. RESULTS

3.1. Voice Onset Time

As mentioned above, VOT, defined as the temporal interval between the stop release and the onset of vocal fold activity for the following vowel, has been the most extensively examined parameter of the acquisition of the English phonological *ptk* versus *bdg* contrast. Cross-language research has shown that the two categories of stops are phonetically implemented in languages with VOT values falling into three ranges: lead, that is, negative values in the case of prevoiced stops such as *bdg* in the major Romance languages; short-lag, that is, small positive values for voiceless unaspirated stops like Romance *ptk*, or initial *bdg* in the major Germanic languages; and long-lag, that is, high positive values for voiceless aspirated stops as in Germanic *ptk* (Lisker and Abramson 1964).

As table I illustrates the results of the present investigation confirm those of previous studies with respect to the implementation of English and French *ptk* as, respectively, long-lag and short-lag stops by monolingual speakers. The results of all three speaker groups reflect the presumably universal effect of place of articulation, according to which VOT values increase from labials to velars (e.g. Lisker and Abramson 1964).

Table I. Mean Voice Onset Time duration (in ms) of word-initial stops produced by the three speaker groups and individual speakers within each group.

Speakers	/p/	/b/	/t/	/d/	/k/	/g/
EM: JO	80.85	13.43	94.06	26.95	105.75	29.94
MV	71.80	17.54	73.27	26.71	77.68	33.59
DT	69.80	14.35	87.36	28.33	90.44	31.98
DS	51.88	14.34	74.13	22.26	81.03	25.50
BA	<u>72.00</u>	<u>16.52</u>	<u>77.22</u>	<u>24.02</u>	<u>91.30</u>	<u>24.14</u>
X	69.27	15.24	81.21	25.65	89.24	22.71
FM: BF	-	12.03	14.89	16.76	21.81	12.03
KD	-	10.50	11.93	10.13	25.26	13.74
KDA	-	10.60	16.49	12.34	30.86	15.85
NR	-	13.00	17.08	13.57	27.06	12.46
XX	-	<u>9.67</u>	<u>10.86</u>	<u>11.50</u>	<u>25.51</u>	<u>11.27</u>
X	-	11.16	14.25	12.86	26.10	13.07
FB: MM	18.82	9.71	16.78	16.88	44.17	18.53
OF	35.37	12.40	43.62	17.63	52.65	19.10
PW	20.46	12.60	34.00	16.92	47.16	20.27
MB	<u>20.34</u>	<u>11.75</u>	<u>34.79</u>	<u>16.40</u>	<u>41.51</u>	<u>17.19</u>
X	23.75	11.62	34.80	16.96	46.37	18.77

EM stands for English Monolinguals, FM for French Monolinguals, and FB for French Bilinguals.

The other initials are those of the individual speakers' names, except XX whose name is not known. No values are given for French /p/, as no French word in the data began with /p/.

The group means are based on individual subject means. The numbers in boldface locate the values closest to the English monolinguals'.

Native English *ptk* have an average VOT of 69 ms, 81 ms and 89 ms, respectively, in the sentence-medial word-initial position under focus investigated here. The values range from 52 to 81 ms for /p/, 73 to 94 for /t/, and 78 to 106 for /k/, depending in part on small variations in rate of articulation, slightly different degrees of emphasis on the relevant words by different speakers, and presumably also on individual variation in the implementation of that feature. Native French *tk* only reach a VOT length of 14 and 26 ms, respectively, with proportionally much less inter-speaker variation, due to the much smaller values. The bilingual speakers' data reveal an average VOT of 23 ms for /p/, 34 for /t/, and 46 for /k/. Thus whereas their /p/'s are located in the short-lag range, their /t/'s and /k/'s are more strongly aspirated. All three measures, however, are roughly located at an intermediate position between those of the two monolingual groups, which replicates previous findings (e.g. Caramazza et al. 1973). The results for a number of *bdg* realizations in the data as short-lagged, partially voiceless, stops likewise place the bilinguals between the two monolingual groups.

A closer look at individual measurements of the bilinguals reveals a certain amount of inter-speaker variation with respect to the VOT of *ptk*.

Generally speaking, subject OF's values come closest to the English monolinguals' and MM's are farthest. For /p/ only OF has intermediate values, the other speakers' VOT being quite a bit shorter. For /t/ intermediate values are found for three of the subjects, and for /k/ they are found for all four speakers, with OF's always somewhat higher than that of the other three. This is possibly related to the fact that (1) for French speakers the acquisition of English apical stops involves also a change in place of articulation from dental to alveolar, thus from inherently less to more aspiration; and (2) that the "voiceless" apical stop (and to a lesser extent the velar, inherently more aspirated, stop) has been found to have an aspirated contextual variant before high vowels in French (e.g. Kohler 1981). It is presumably easier to extend to other contexts, in this case to following non-high vowels, an already existing allophone for /t/ (and /k/) than to acquire an entirely new one for /p/.

The results found here, plus the fact that OF went to a French-English bilingual school in Paris from age six to eighteen with stays in Ireland during Summers, suggests, not surprisingly, (1) the acquisition of aspiration is sensitive to the age one is exposed to the foreign language, as captured by the so-called *Critical Period Hypothesis* (e.g. Lenneberg 1967); and (2) that it is possibly sensitive to the amount of formal schooling in the foreign language coupled with naturalistic exposure to it, which the five pre-teen years in the bilingual school provided for OF. The other speakers started English later, at eleven or thirteen, and the instruction was limited to three hours a week. Apparently, naturalistic post-teen exposure alone is not as effective, as shown by the fact that speakers PW, MM, and MB, in spite of much longer residence in the U.S., have not developed an aspirated /p/. Furthermore, the present results suggest that the acquisition of VOT in a foreign language is gradual rather than categorical, thereby replicating an earlier study with Spanish learners of English in which it was found that L2 learners learn to delay *gradually* the onset of voicing, rather than acquire it all at once (Nathan et al. 1987).

3.2. Consonant closure duration

Both languages evidence a slightly longer initial stop closure duration in the context of final /ptk/ (*tap, peck, bock*) than in the context of final /bdg/ (*tab, peg, bog*). The difference is small, yet consistent. In both languages, but more so in English than in French, labials tend to have a longer closure duration than dental/alveolars which are in turn longer than velars, as already noted in some earlier studies (e.g. Fischer-Jørgensen 1964).

English *ptk* have a shorter closure duration than *bdg*: an 88 ms average for the former, 99 ms for the latter. In French the opposite pertains: *ptk* have a longer closure duration (133 ms) than *bdg* (119 ms). These results replicate previous studies which also report small but relatively stable and statistically significant differences (e.g. Fischer-Jørgensen 1968).

Table II. Initial consonant closure duration (in ms.); difference in closure duration between voiceless and voiced stops.

<i>Speakers</i>		/p/	/b/	/t/	/d/	/k/	/g/	/p/-/b/	/t/-/d/	/k/-/g/
<i>EM:</i>	JO	124.40	141.16	115.73	127.80	95.72	117.29	-16.76	-12.07	-21.57
	MV	87.81	104.38	82.68	95.28	81.82	92.43	-16.57	-12.60	-10.61
	DT	105.65	124.16	91.32	103.13	90.93	96.53	-18.51	-9.81	-5.60
	DS	110.54	125.27	102.00	115.73	94.69	99.59	-14.73	-13.73	-5.10
	BA	98.41	111.68	83.89	92.95	83.48	91.52	-13.27	-9.06	-8.04
<i>FM:</i>	BF	-	120.40	137.25	117.75	136.00	115.13	-	19.50	20.87
	KD	-	130.20	153.60	121.25	158.33	123.40	-	32.35	34.93
	KDA	-	117.50	130.50	104.13	134.25	98.71	-	26.37	35.54
	NR	-	121.67	145.25	123.45	137.80	120.66	-	21.80	17.14
	XX	-	119.50	133.00	117.75	132.04	119.44	-	15.25	12.60
<i>FB:</i>	MM	179.61	135.69	171.26	130.02	134.27	118.29	43.92	41.24	15.98
	OF	117.43	115.85	109.24	103.67	97.69	89.89	7.80	5.57	1.58
	PW	168.69	165.54	136.06	128.13	128.42	120.15	8.27	7.93	3.15
	MB	140.92	107.89	122.81	97.80	102.36	92.49	33.03	25.01	9.87

The bilinguals' stop closure duration differences resemble the French monolinguals': the differences are positive. There is, however, some notable inter-speaker variation. OF's closure duration differences come closest to the English pattern, at all three places of articulation, closely followed by PW's. MM's are farthest from English.

The dissimilarity in closure durations between the two languages is related to the differing VOT patterns: the English long-lag VOT of voiceless stops follows a shorter closure duration than the short-lag VOT of "voiced" stops. VOT and closure duration are thus negatively correlated. In French, where voiceless stops have short-lag VOT and "voiced" stops have usually voicing lead, or exceptionally in some contexts including the one studied here, short-lag VOT, voiceless stops have an inherently longer closure phase than voiced stops. This has been related to the necessity of an air pressure differential between the sub- and the supra-glottal cavities for maintaining glottal pulsing in voiced stops (e.g. Lisker 1977, Westbury 1983). Such stops are inherently shorter, because it is difficult to maintain the pressure differential for very long.

A comparison of the closure duration results with the VOT results reveals that none of the bilinguals has fully mastered the sequential timing of these two temporal intervals in his/her English. OF comes closest, followed by PW. Based on the fact that for all four bilinguals the closure duration difference is smallest and the VOT largest for velars, followed by apicals, one can safely suppose that full mastery would start with these. It is presumably facilitated by the existence in French of aspirated variants in some contexts, as opposed to /p/ for which no such variants exist, and by the inherently longer VOT and shorter closure durations for these stops.

4.1. Glottal pulsing

Phonetically speaking four types of voiced stops were found in the data: those voiced over all of their closure, those voiceless over all of their closure, those voiced over half of their closure duration, and those voiceless over half of their duration. The less than totally voiced stops start with glottal pulsing which dies down before the release burst. In French the following bursts are often voiced, in English they are overwhelmingly voiceless.

Presumably the presence of sentence-accent is responsible for the rather low percentages of completely voiced stops for all three speaker groups (except, strangely, for bilingual OF!), as can be seen in Table III: the English monolinguals fully voiced a mere 2% of their *bdg*, the French monolinguals 32%, and the bilinguals 30%. The table also gives the percentages found in the data of tokens with glottal pulsing over half of their closure: 14% in native English, 45% in French, and 40% in the bilinguals' English. In both languages voicing tends to be more frequent with labials

Table III. Percentages of fully voiced initial *bdg* (100%); percentages of tokens with voicing over half of the closure duration (50+ %); sum of the two (Sum); ratio of voiced closure interval to total closure interval in 50+ % tokens (Ratio).

Speakers	/b/				/d/				/g/			
	100%	50+ %	Sum	Ratio	100%	50+ %	Sum	Ratio	100%	50+ %	Sum	Ratio
EM: JO	0	0	0	--	0	0	0	--	0	0	0	--
MV	0	29	29	66	0	21	21	57	0	0	0	--
DT	0	0	0	--	0	0	0	--	0	0	0	--
DS	0	38	38	54	12	28	40	64	5	10	15	60
BA	<u>10</u>	<u>30</u>	<u>40</u>	<u>50</u>	<u>0</u>	<u>39</u>	<u>39</u>	<u>67</u>	<u>6</u>	<u>19</u>	<u>25</u>	<u>64</u>
X	2	19	21	60	2	18	20	63	2	6	8	62
FM: BF	41	59	100	61	37	53	90	69	30	57	87	57
KD	38	42	80	83	28	54	82	78	25	42	67	64
KDA	25	65	90	69	29	50	79	64	19	43	62	60
NR	34	39	73	75	30	40	70	59	30	32	62	59
XX	<u>42</u>	<u>37</u>	<u>79</u>	<u>72</u>	<u>39</u>	<u>35</u>	<u>74</u>	<u>75</u>	<u>28</u>	<u>29</u>	<u>57</u>	<u>63</u>
X	36	48	84	71	33	46	79	69	26	41	67	61
FB: MM	27	63	90	73	28	61	89	73	20	70	90	71
OF	78	17	95	83	89	11	100	74	70	30	100	68
PW	0	39	39	62	0	6	6	52	0	0	0	--
MB	<u>30</u>	<u>70</u>	<u>100</u>	<u>68</u>	<u>15</u>	<u>65</u>	<u>80</u>	<u>70</u>	<u>0</u>	<u>50</u>	<u>50</u>	<u>56</u>
X	34	47	81	72	33	36	69	67	23	38	60	65

Due to rounding errors there can be some slight differences between averages of single columns and Sum or X.

and least with velars. The exact proportion of actual glottal pulsing in tokens voiced over half of their duration was also calculated, based on the ratio of the voiced interval over the total interval of the stop.

The results from the monolinguals show that French and English differ greatly in the percentage of stops one can thus operationally define as voiced (i.e., fully voiced stops plus stops voiced over half of their closure): 16.33% for English, 76.67% for French. Apart from speaker PW, the bilinguals' values clearly stand apart from the English monolinguals' and come closer to the French speakers'. All together they have 69.73% of voiced stops; without PW, 88.22%. The difference in the ratios is small, but consistent: the English speakers have glottal pulsing over 61.67% of the closure of over 50% partially voiced stops; the French speakers have glottal pulsing over 67%, and the bilinguals over 68% (without PW, 70.67%), and are thus again closer to the French monolinguals than to the English speakers.

Table IV displays the percentages of totally voiceless *bdg* in the data and of those with voicing over less than half of their closure duration, as well as the percentage of stop interval that was voiceless, calculated by dividing the duration of voiceless closure by the total closure duration. Again French and English appear at opposite ends: 82.20% of the English stops can be operationally defined as being voiceless, as opposed to 23.33% of the French ones. Except for PW, the bilinguals are here also generally speaking close to the French voicing pattern in their English with 30.67% voiceless stops all together and 12.22% without PW. The ratios do not yield any consistent results here.

Table IV. Percentages of totally voiceless initial *bdg* (100%); percentages of tokens with voicing over less than half of the closure duration (50%); sum of the two (Sum); ratio of voiced closure interval to total closure interval in 50-% tokens (Ratio).

Speakers	/b/				/d/				/g/			
	100%	50%	Sum	Ratio	100%	50%	Sum	Ratio	100%	50%	Sum	Ratio
EM: JO	92	8	100	14	95	5	100	18	100	0	100	--
MV	24	47	71	34	42	37	79	29	90	10	100	29
DT	0	100	100	35	0	100	100	29	0	100	100	23
DS	6	56	62	43	0	60	60	39	15	70	85	35
BA	<u>0</u>	<u>60</u>	<u>60</u>	<u>37</u>	<u>0</u>	<u>61</u>	<u>61</u>	<u>33</u>	<u>6</u>	<u>69</u>	<u>75</u>	<u>28</u>
X	24	54	79	33	27	52	80	30	42	50	92	29
FM: BF	0	0	0	--	0	10	10	34	0	13	13	27
KD	9	11	20	28	9	9	18	33	10	23	33	30
KDA	4	6	10	34	4	17	21	30	9	29	38	30
NR	5	22	27	29	20	12	32	28	18	20	38	34
XX	<u>6</u>	<u>15</u>	<u>21</u>	<u>37</u>	<u>10</u>	<u>11</u>	<u>21</u>	<u>40</u>	<u>17</u>	<u>26</u>	<u>43</u>	<u>37</u>
X	5	11	16	32	9	12	21	33	11	22	33	32
FB: MM	0	12	12	41	6	6	12	44	0	10	10	35
OF	0	6	6	35	0	0	0	--	0	0	0	--
PW	22	39	61	34	41	53	94	30	60	40	100	16
MB	<u>0</u>	<u>0</u>	<u>0</u>	<u>--</u>	<u>5</u>	<u>15</u>	<u>20</u>	<u>37</u>	<u>0</u>	<u>50</u>	<u>50</u>	<u>30</u>
X	6	14	20	37	13	19	32	37	15	25	40	27

OF's overwhelmingly voiced renditions are quite surprising, in view of his performance with VOT and closure duration. A possible explanation is that he has been exposed in his pre-teens and teens to American and British English voicing patterns with more fully voiced stops and has deduced, as it were, that English is no different from French. A reinforcing factor is that, as he noted in the questionnaire handed out to him about his English language profile, most of his professors and his fellow Ph.D. students, who are also his closest friends here, are from India (and have presumably mostly voiced *bdg* due to interference from their native languages). The fact that he fully voices even more than the French monolinguals (98%, as opposed to 77%) is also attributable to the smaller degree of emphasis on the relevant words than most of the other speakers and to a slightly faster tempo than some of them, as witnessed by the mean total sentence duration compiled for the sentences with *caught* and *tab* (not shown here, due to space limitations).

PW's high percentage of voiceless realizations is just as surprising. One factor which seems to have played a role is that, besides her French high school English teachers, she has been exposed for eighteen years mainly to the pattern used here in Ohio, which as the results from the monolinguals show, includes a preponderance of voiceless stops. The high percentages of totally voiceless tokens in her data (41.13%, compared with 44% of partially voiceless *bdg*, and 14.92% of voiced tokens), higher even than some of the English monolinguals, suggests that she might at some point have made the generalization that English *bdg* are in fact completely voiceless and is trying to emulate that, succeeding more with the inherently less voiced /d/ and /g/ than with /b/. Degree of emphasis and rate of speech do not seem to have played a role, as her tempo and level of emphasis was closest to MM, who has a predominance of voiced stops, although individual variation with respect to these two factors cannot be ruled out.

The voicing values for the other two speakers tested here locate them between the French and English monolinguals, but much closer to the former than to the latter. One of the speakers, MB, has spent ten years in New York City before moving to Ohio, which might play a role. Both speakers are French professors at Ohio State; they use almost exclusively French during their work day and spend some time in France every year. In addition MB's social circle in the U.S. is almost exclusively French and MM uses French at home with her son and English with her husband who knows no French. The small difference between their renditions and OF's is again attributable to slight differences in emphasis and tempo. Thus, if at all aware of the difference in the amount of voicing between French and English *bdg* and willing to learn to use the English voicing pattern (and thereby lose their French accent!), they have not mastered the exact timing of the motor commands to implement it. Thus although, under this assumption, aware of the fact that English *bdg* are not as voiced in initial context under focus as French *bdg*, they are not, however, able to gauge and reproduce the exact amount of partial voicing or complete lack of it present in English. One last factor worth mentioning is that possibly interference from one's native language is stronger in reading than in speaking. It is thus possible that OF, MM and MB's spontaneous English is in fact less accented than their read English. PW, on the other hand, reported in the questionnaire that her work requires her to be in constant speaking contact with people around here and to often give presentations and speeches in English; and she admitted having consciously worked at polishing her English.

4. CONCLUSION

The goal of this study was to examine basically two aspects of the acquisition of English stops by French speakers: closure duration correlating with VOT and voicing. The most advanced bilinguals available were chosen as subjects to guarantee some degree of acquisition.

With respect to voicing it was found that only one of the speakers has acquired the English pattern of predominantly voiceless stops in the context tested here, namely word-initially under focus. The other speakers' renditions are still very close to the French model of predominantly voiced *bdg*. The fact that no intermediate values were found for any speaker suggests that the acquisition of the voicing parameter is, in fact, categorical, rather than gradual, although experiments with additional subjects are needed to confirm this finding.

With respect to closure duration and VOT it was found that none of the speakers has acquired the English pattern. They all have intermediate values with one speaker coming closer to the English model than the others. Acquisition of this parameter thus seems to be gradual. It was assumed to be facilitated by the existence in French of aspirated contextual variants of /t/ and /k/.

Given the low degree of acquisition for both parameters it is difficult to make firm conclusions as to the order of their acquisition, although based on the results from these four subjects it seems that the correlation closure duration-VOT is harder to acquire for French speakers than the voicing pattern. This is not altogether surprising, as voiceless allophones do exist in Standard French in the context of emphatic stress (so-called *accent d'insistance*). It is also difficult to conclude from the fact that the speaker who mastered the voicing pattern is not the same as the one who best performs with closure/VOT that there are individual differences in sensitivity, due to the presence of interfering external factors. The study thus leaves a number of questions open to be hopefully answered in future research.

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NASAL ASSIMILATION IN SPANISH

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It is well-known that in many Spanish dialects consonants are weakened or lost in post-nuclear position. Also in this position there is neutralization of many consonants and assimilation. In this paper the phenomenon of nasal assimilation will be discussed.

Spanish has 3 underlying nasal phonemes--/m/, /n/ and the palatal /ɲ/. Examples of each are found in the words cama, cana and caña. These nasals contrast phonemically except (1) word-finally before a pause or a vowel where they are neutralized to [n] or [ŋ] or [m] depending on the dialect and (2) before a consonant in the following manner:

before a bilabial [m] "un pato" [umpato]
before a labiodental [ɱ] "enfermo" [emfermo]
before a dental [ɲ] "santa" [saɲta]
before an alveolar [n] "ansiedad" [ansjedad]
before a palatoalveolar [n'] "ancho" [an'čo]
before a palatal [ɲ] "un yate" [unɲate]
before a velar [ŋ] "angulo" [aŋgulo]
before a pause [n], [ŋ], or [m] "album" [albuɲ], [albuŋ] or [albuɱ]

Examples of this type of assimilation are found between morphemes as well as within them.

Before a vowel in another word, a word-final nasal is neutralized and takes the default value for nasals of that dialect. For example, "un album" is [unalbunes] in [+alveolar] dialects and [uŋalbunes] in [+velar] dialects. However, the plural of "album" is [albunes] in both dialects. This shows that neutralization must take place after pluralization, but before post-lexical resyllabification.

In this paper a multi-tiered auto-segmental approach to phonology based on a synthesis of several theoretical components discussed in the work of Hayes(1986), Clements(1985) and McDonald(1988) will be used to analyze the phenomenon. This analysis will be based on a multi-tiered concept where assimilation is

expressed as the spreading of features.

For the purposes of this discussion the following tiers will be necessary:

1. syllable, which is represented by ✓
2. nucleus, which is represented by +
3. CV, which serves to distinguish functional positions within the syllable
4. manner
5. root, which can also be viewed as the segmental level
6. place

The syllable is a common domain for many phonological phenomena; therefore, it is formally represented in this model. The syllable tier is composed of CV elements from the CV tier. C stands for a non-syllabic element, while V stands for a syllabic element. Intermediate between the CV tier and the syllable tier is the nucleus tier. It is a crucial tier in that it determines the domains of many rules that are required for Spanish. The most common domain of assimilation and neutralization in Spanish is in the post-nuclear position of the syllable, for example, obstruent voicing assimilation, obstruent lenition-fortition, velarization, etc.

The need for representation of perceived speech sounds has a long history. Obviously, perceived speech sounds are the basic units of language because they hold psychological reality for the speakers of a language. These perceived speech sounds will be represented by the root tier. The root tier is the combination of all the segmental distinctive features. The root tier may also be considered as the segmental tier.

In many languages there are rules in which point of articulation features change as a group without necessarily changing the other features of the segment. Therefore, a place tier is warranted. Manner features also tend to work independently of other features; therefore a manner tier is a necessary component of a multi-tiered analysis of Spanish. The manner tier consists of such features as nasality, consonantality, and so forth. These tiers have been determined to be necessary in order to describe other areas of Spanish as well.

Nasal assimilation in Spanish may be handled in the following manner. First, the neutralization process occurs whereby all post-nuclear nasals are dissociated from their place features. This process occurs before post-lexical resyllabification. It must occur before post-lexical

resyllabification because nasal neutralization is seen word-finally before a vowel even though the neutralized nasal ends up in syllable-initial position after resyllabification. Some examples are: "son osos" [so-no-sos] and "con ella" [co-ne-ya] in the [+velar] dialect.

The neutralization process may be described as:

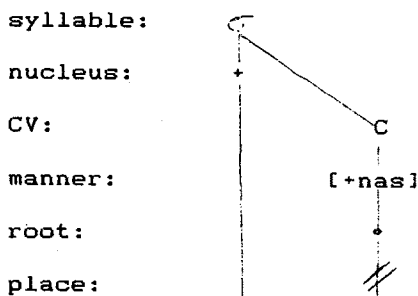


Figure 1

Second, the assimilation process itself occurs.

Under the present analysis the following rule may be postulated for nasal assimilation in Spanish:

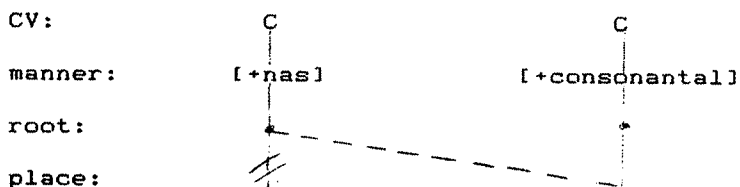
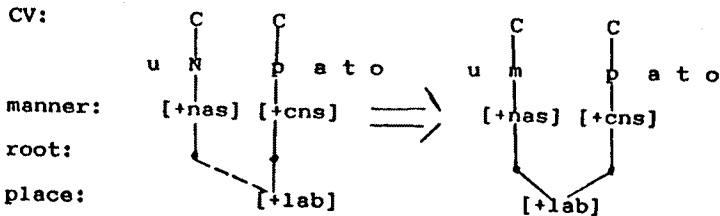
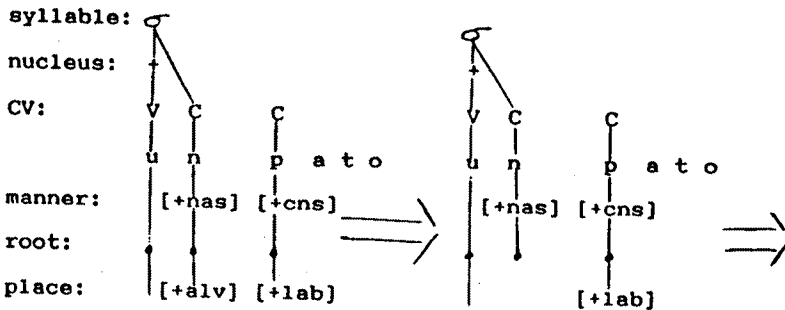
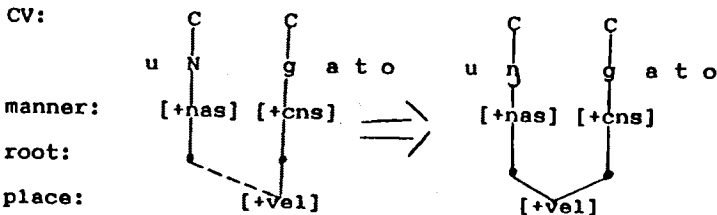
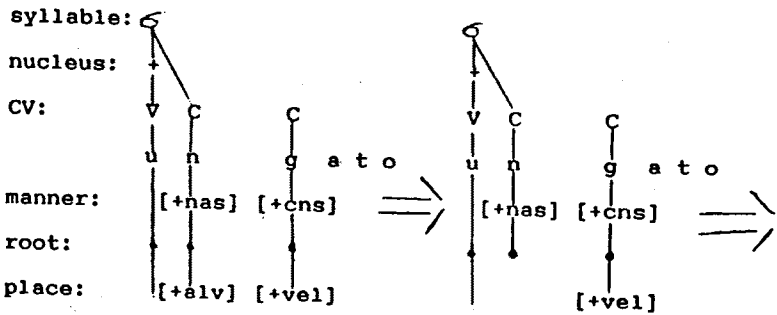


Figure 2

In this analysis we will need the manner tier, the place tier and the CV tier. According to the rule, a nasal consonant unassociated with the place tier receives the place features of the following consonant by regressive spreading.

Examples of the rule at work include (N=unspecified nasal):



At the end of a derivation, all nasals which are still unassociated to the place tier will receive their phonetic features from a default rule. For [n] dialects:

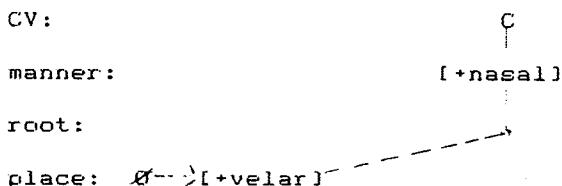


Figure 3

For the other dialects [+velar] would be written instead as [+alveolar] or [+bilabial].

The nasal neutralization rule also works for cases of so-called nasal depalatalization. In word pairs such as desdén versus desdeñoso there is an alternation between [n] and [ɲ]. In desdén it is posited that the underlying nasal was a /n/. However, after the nasal neutralization rule takes place and the default rule fills in the place features we end up with [desden]. Thus, cases of "nasal depalatalization" are taken care of without resorting to any special rule.

It is interesting to note that in some Caribbean dialects the syllable-final nasal does not assimilate to the point of articulation of the following consonant or very partially assimilates to labials and labiodentals (the dialect of Havana, Cuba has been documented by Guitart(1976)), but it has been heard in other dialects and more study needs to be done in this area (see Guitart 1976:23-24). Guitart states that "in the case of the nasals, it has been seen that all nasals are realized as velar before other consonants and in word-final position" (Guitart 1976:49). Apparently, in Havana Cuban speech there is a tendency toward simplification and all syllable-final nasals (before post-lexical resyllabification occurs) become [ŋ]. Examples of this include "instituto" [iŋtituto] and "un domingo" [uŋdomingo]. Velarization is seen as a step towards the total deletion of post-nuclear nasals.

These facts may be accounted for by merely eliminating the nasal assimilation rule. For example, in "un doctor" the /n/ of "un" would be neutralized and the default rule would give it the [+velar] feature.

As the previous exposition shows, Spanish nasal behavior in post-nuclear position can be easily described and explained by using a multi-tiered phonological approach. The main rule, nasal assimilation is a perfect natural process which is produced by the spreading of features in anticipation of the following sound to be pronounced. Using a multi-tiered analysis of the data allows for a simple description of the processes involved without resorting to arbitrary rules and symbols.

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ORTHOGRAPHIC CONSTRAINTS ON SOUND CHANGE:
THE NON-NEUTRALIZATION OF GRAPHEMES IN CASTILIAN*

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1. Introduction.

This paper spotlights a process of velar softening in Modern Castilian Spanish which has rarely been discussed in the literature. In addition to rethinking the sociolinguistic and contextual/phonological parameters for the phenomenon--which, to my knowledge, have received little if any attention of North American linguists--I shall focus on the role of orthography in steering an otherwise natural and automatic (dare I say 'exceptionless?') sound change in one direction or another.

2. Madrilenian velar softening.

Depending on dialectal factors and other variables, syllable-final /k/ in Modern Spanish may be realized phonetically as [k], zero, or any one of a great number of fricative segments in between. Navarro 1985, for example, offers such possible pronunciations for *factor* as [faʔtor], [fattor], and [fastor]. Many speakers in León and in Old and New Castile (Northern and Central Spain), meanwhile, have settled on a voiceless interdental slit fricative [θ] as the surface manifestation of the first segment in this 'learned cluster'. In the city of Burgos, Martínez Martín 1983 documents interdental fricatives in 47% of the pronunciations of /kt/ by a test group, while less than 23% are said to employ a velar stop--even in the reading pronunciations on which these statistics are based. He goes on to show not only that the pronunciations *inse*[θt]o 'insect', *proye*[θt]il 'projectile', *v*[θt]ima 'victim', *traye*[θt]o 'way, journey', and *exa*[θt]o 'exact' are significantly more common than *inse*[kt]o, etc., but also that the former characterize to an increasing degree the speech of younger generations.¹

Unfortunately, the otherwise invaluable first volume (and the only one to appear) of the *Atlas lingüístico de la Península Ibérica* examines not one single word with a /kt/ cluster that might shed light on the geographical distribution of the allophone [θ] in such a context. In the absence of such information, however, Martínez Martín (1983:138-139) cites, most notably, Araújo (1894:59), Lapesa (1980:477 ff.), Llorente Maldonado (1965:328), and Quilis (1965:23) while suggesting a range for the phenomenon centering in Old Castile but extending to the western edge of Castilian-speaking territory and, of course, to Madrid in more recent generations.

I have chosen the label 'Madrilenian velar softening', nevertheless, partly because most of my own experience with and experimental study of the phenomenon center on the capital city itself and, more importantly perhaps, as a way of distinguishing the process from a morphophonological rule of velar softening about which generative phonologists have written a great deal. Cressey (1979:89-90), for example, formulates a rule by which 'the velar stops /k/ and /g/ are softened to the fricatives [θ] and [x], respectively, when followed by a front vowel.' This description (not to mention his illustrative pairs such as [elektriko] *eléctrico* 'electric' versus [elektriθiðað] *electricidad* 'electricity') makes it clear that the /kt/ clusters at issue in this paper are not affected by this rule of abstract

phonology which, not coincidentally, corresponds to the treatment of *ç* (and *g*) in Modern Spanish orthography, to which we now turn our attention.²

3. Spanish orthography.

The Royal Spanish Academy (Real Academia Española 1973:122 ff.) maintains that the phoneme /k/ is represented orthographically by the letter *c* except before the vowels *e* and *i* (in which case the digraph *qu* appears instead) and in a very small number of (mostly foreign) words spelled with *k* (e. g. *kilómetro*, *krausista*) or *ch* (word-finally in Catalan names). Most importantly, they demonstrate the exclusive use of *c* for /k/ in syllable-coda position in *'acción*, *açmé*, *açné*, *lección*, *dicción*, *octubre*, *conduçto*, . . . *cofiac*, *tictac*.

When orthographic *c* does appear before a front vowel (cf. the discussion of Cressey 1979, above), it represents the phoneme /θ/: *cero* [θero] 'zero', *cita* [θita] 'appointment'. While the letter *z* occasionally appears in this context as well, it is required to represent /θ/ in all other contexts, where there are no alternative spellings.

According to these rules, then, the phoneme /θ/ must be represented syllable-finally by orthographic *z*, a letter which has no other value in Modern Castilian. This makes it easy to understand why author Ramos Carrión uses *z* to illustrate Madrilénian velar softening in his musical comedy *Agua, azucarillos y aguardiente*, writing *indireztas* for *indirectas* and *afeztan* for *afectan*.³ (Latin American writers, in fact, occasionally employ the graph *z* (in place of *s*) to represent a lisping sound (of a child, for example) even though outside of Spain there is no phonemic distinction between /θ/ and /s/ and, consequently, only an artificial orthographic one between *c* and *z* on one hand and *s* on the other.)

The letter *x* is later mentioned in the Academy's grammar as representing the phoneme series /ks/, although they acknowledge the deletion of the /k/ in many lexical items (e. g. *examen* [esamen] 'exam'). Two important points are worth noting at this juncture with regard to the role of *x*. First of all, the letter combination *cs*, though rare, is capable of standing for the same phonemes as *x* and does so by convention in such forms as *facsimilar* 'facsimilar'.⁴ Secondly, Mexican Spanish often uses the letter *x* (especially in place names) to represent the phoneme /x/ in words that would be spelled in Castilian with the grapheme *j*.⁵ As the explanation in the following section unfolds, let us not forget that these facts both contribute to and are influenced by a certain intolerance on the part of Peninsular speakers (as opposed to Latin Americans) for unpredictable grapheme-to-phoneme correspondence.

This is not to say, of course, that Spanish orthography is anything close to phonemic. Korreas (1630) and Mosterín (1981), in fact, have proposed major revisions to the spelling system that more closely approximate a one-to-one correspondence between Spanish phonemes and the graphemes that would represent them. It is interesting to note that Mosterín's 'ortografía fonémica del español', which very logically proposes *k* as the orthographic representation of every instance of /k/, would be hard-pressed to resolve the problem of the variant pronunciations of *doctor* discussed above (i. e., do we write *doktor* or *doztor*?), especially since it is in a prestige dialect where change in this direction is so apparent. Korreas's proposal, meanwhile, concurs with Mosterín's in the use of *k* for /k/, but reflects a seventeenth-century pronunciation of words such as *perfecto* and *doctor* which simply eliminated the syllable-final stop altogether: *perfoto*, *dotor*. If the Spanish Academy had adopted *k* hundreds of years ago as the

representation of syllable-final (and every other) /k/, in fact, there is reason to believe that the dialectal variation we see today (as well as its perception by speakers themselves) might have been somewhat different, as I shall illustrate in the next three sections.

While the data presented above suggest that there exists a productive rule of velar softening whereby /k/→[θ] for many Castilian speakers, the present study brings to light the fact that syllable-final /k/ is, to varying degrees, resistant to this rule in four different word types. Section 4, below, describes a reading study of 70 child subjects which addresses the resistance of Madrilénian velar softening to syllable-final /k/ from the first two sources: orthographic *k* in loans and nonce words and orthographic *x*. Section 5 analyzes information from other interviews which suggests that adults fail to apply this velar softening rule to syllable-final orthographic *c* in two further classes of words: forms where the /k/ has onomatopoeic or phonesthemic value, and certain Hispanicized loans from (for example) American Indian languages.

4. Orthographic exceptions to velar softening.

In order to test the hypothesis that certain aspects of Spanish orthography either constrain or promote the application of the otherwise automatic process I have called Madrilénian velar softening, a linguistic experiment was carried out in December of 1985 in two elementary schools in Spain. Fifty-five Madrilénian and fifteen Valencian children ages 7 to 10 read word lists which included, syllable-finally, ten occurrences of orthographic *c*, four occurrences of orthographic *k*, and five occurrences of orthographic *x* in a mixture of both real and nonce tokens.⁶ All of the relevant forms appear in (1) and (2).

(1) RELEVANT REAL TOKENS IN CHILDREN'S WORD LISTS

(a) orth. <i>c</i>	<i>doctor</i>	'doctor'
	<i>accidentes</i>	'accidents'
	<i>técnico</i>	'technical'
	<i>tic</i>	'nervous twitch'

(b) orth. <i>x</i>	<i>examen</i>	'exam'
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(2) RELEVANT NONCE TOKENS IN CHILDREN'S WORD LISTS

(a) orth. <i>c</i>	<i>locta, acceilar, pindac, reccota, taccal, vécnigo</i>
--------------------	--

(b) orth. <i>x</i>	<i>toxióñ, puxolo, exteno, cólex</i>
--------------------	--------------------------------------

(c) orth. <i>k</i>	<i>tamok, dakta, mekso, ekción</i>
--------------------	------------------------------------

Words assumed to be familiar to the children, such as *doctor* and *accidentes*, were placed at the beginning of the list so that each informant's idiolect (vis-à-vis velar softening) might be assessed from a natural reading style--that is, before the child encountered unfamiliar (and often hard-to-pronounce or even 'impossible') letter combinations and had to rely on her or his knowledge of Spanish orthography to sound out forms. Reading rates made it clear that all of the children did, indeed, recognize these two lexical items; their various treatments of orthographic *c* in each allowed the researchers to later divide the seventy subjects into two distinct groups: those who produced [k] syllable-finally and those who opted for velar softening instead.⁷ Of the

fifty-five Madrilenians tested, thirteen were found to pronounce *doctor* as [doθtor]; ten of these failed to produce the allophone [k] in *accidentes* as well, realizing the grapheme sequence *cc* as [θ].⁸ As expected, none of the Valencians participated in velar softening.

Virtually all of the children's responses to the other test words patterned in one of these two divergent ways as well. The thirteen informants who read [doθtor] concurred in all but one case in the pronunciation of *locta* with [θ]; eleven of the thirteen also read [tiθ] for *tic* and eight of them read *pindac* with final [θ] as well.⁹ Word-final orthographic *k* clearly resisted velar softening, however, as twelve of the thirteen students pronounced [k] in each case.

For the most part, those who did not apply velar softening in the two words familiar to them (e. g. *doctor* and *accidentes*) pronounced all instances of syllable-final *c*, *k*, and (the syllable-final element of) *x* with the phone [k] or zero. The fifteen Valencians, for example, never read [doθtor], [pindaθ], or [tiθ], and always pronounced a clear [k] in *tamok*, *dakta*, *mekso*, and *ekción* as well.

Counted among the exceptions to this obvious trend were a few Madrilenians who read *tic*, *locta*, or *pindac* with [θ], even though they clearly did not apply the velar softening rule automatically in their speech. This is not surprising, given that these students--especially the younger ones--were just beginning to master the grapheme-to-phoneme correspondences of their language and, as we might expect, were having some difficulty with the multiple phonemic value of the graph *c*. Lending credence to this explanation is the additional fact that four children pronounced *tracune*, a control word hidden among those mentioned above, with the interdental fricative as well, in spite of the prescriptive and dialectal unanimity requiring that this *cu* be realized as [ku]. A fifth student read [traθkune], epenthesizing a segment on the pattern of the pronunciation of *cc* in *accidentes*, and a sixth corrected himself with [k] after having produced [θ] the first time. Still, not one of the Valencians pronounced other than [k] for the *c* of *tracune*, and none of the informants from either city applied velar softening to the /k/ of *nitico*.

It is no wonder, too, that the *cc* of *reccota* and *taccal* should elicit [θk] pronunciations from four of the thirteen Madrilenians who employed velar softening in their speech, or that three other children should follow suit. These spellings are admittedly impossible in standard Spanish, since geminate /k/ does not exist in that language. Consequently, the children could not have had any experience with *cc* before *a* or *o*.

Words spelled with *x* never resulted in pronunciations with [θ]. In both Madrid and Valencia, however, the first phoneme of the sequence /ks/ was freely deleted in *examen*, *toxión*, *puxolo*, *exteno*, and *cólex*; as would be common in many areas of the Spanish-speaking world. In fact, it might make more sense to say that the grapheme *x* has become merely an arbitrary variant of *s* for many speakers, since the /k/ fails to be realized by the Madrilenians in *toxión*, for instance, 46% of the time. By comparison, consider the force exerted by the grapheme *k* in *ekción*, where its deletion occurs in only 9% of these reading pronunciations by the same children, or in *mekso*, where deletion takes place only 7% of the time. To further the comparison, we should note that the orthographic *cc* of *accidentes* loses its velar component in 52% of the readings by the same population; the difference here, of course, is that the velar actually softens to [θ] and is then indistinguishable from zero in the context of a following [θ]. These and other figures appear in (3).

(3) DELETION RATES FOR /k/ IN SYLLABLE-FINAL POSITION BY MADRILENIANS

<i>toxión</i>	46%	<i>ekción</i>	9%
<i>puxolo</i>	60%	<i>mekso</i>	7%
<i>accidentes</i>	52%		

This reading study has confirmed the strong association of the letter *ç* with the phone [θ] in Madrid Castilian, including the extension of this correspondence to positions in which other Spanish dialects do not admit [θ] at all. I have claimed that the seemingly automatic process of velar softening by which /doktor/ becomes [doθtor] operates freely in words where the syllable-final /k/ is represented orthographically by *ç*, but that the pronunciation [k] is reinforced by the spelling *k*. I would further suggest that it may just be this stronger alliance between /θ/ and orthographic *ç* for Madrilénians that has caused some confusion among children learning to sound out grapheme *ç* even before *a*, *o*, or *u*.

Orthographic *x*, which represents /ks/ in standard Spanish, also constrains the conversion of this /k/ into [θ], but cannot keep the segment from disappearing altogether. It will be shown that the letter sequence *çs*, which the Spanish Academy would also expect to represent /ks/, enjoys a very different status, falling in line with other orthographic *ç*'s in syllable-final position.

One might be tempted to insist, in light of these facts, that many speakers have reanalyzed the /k/ of *doctor*, *facsimilar*, and other similar words with syllable-final orthographic *ç* as underlying /θ/. To show that the velar softening rule does share properties with automatic ('low-level phonetic') processes and that this and other facts about the variation between [k] and [θ] are not compatible with such a simple 'reanalysis analysis', I shall now turn my attention to a study of adult Castilian speakers.

5. Other exceptions to velar softening.

When it became clear from my own experience that the children's responses discussed above had not provided adequate insight into the complexities of the velar softening phenomenon, I developed a test instrument to relate these statistics to the linguistic behavior and attitudes of adults. Rather than carrying out an experiment on a randomly-chosen population which may or may not have turned out to employ velar softening, I chose to streamline the process (a necessity, given my location so far from the dialect area in question) by interviewing informants as they became available. My sample population covers a number of ages (15-40), socioeconomic groups (a waiter who had finished eight years of school, four high-school students, two telephone company executives, two graduate students, and a university professor--all virtually monolingual except for three) and geographic areas (five Leonese and five Madrilénians), but is by no means purported to be a cross-section of the inhabitants of central Spain. Perhaps the most important fact to keep in mind in this regard is that speakers were not interviewed in the first place unless I knew or had reason to suspect that their idiolects were characterized by the phenomenon in question.

The first part of the interview consisted of largely informal conversation, in which I attempted to ascertain the speaker's treatment of syllable-final /k/ in words such as *octubre* or *doctor*. I would then ask the informant to read two texts and a short word list, and, lastly, to react to other pronunciations which I would suggest. This first text was an adaptation of a flier sent out by the Sociedad Española de Lingüística (Spanish

Linguistics Society) in Madrid during the summer of 1988 with a call for papers for the upcoming annual meeting. After only minor adjustments for the present purpose, the final text included the phrases in (4) in a natural context; graphemes of interest have been underlined here.

- | | |
|--|------------------------------------|
| (4) <i>junta <u>directiva</u></i> | 'board of directors' |
| <i><u>Isaac</u> Peral</i> | '[the name of a street in Madrid]' |
| <i><u>octubre</u></i> | 'October' |
| <i>re<u>producción</u> <u>fac</u>similar</i> | 'photoduplication' |

The second text was a description of a study-abroad program in Cuernavaca, Mexico, in which appeared the Mexican personal and place names in (5), which feature the word-final graph *ç* in a mixture of oxytones and paroxytones.

- | | |
|---------------------------|------------------------------|
| (5) <u>Spanish loan</u> | <u>Mexican pronunciation</u> |
| <i>Cema<u>náhuac</u></i> | /semanáwak/ |
| <i>Cuauhtém<u>oc</u></i> | /kwawtémod/ |
| <i>Huitzil<u>ac</u></i> | /witsilák/ |
| <i>Chapul<u>tepec</u></i> | /čapultépék/ |
| <i>Oax<u>tepec</u></i> | /wastépék/ |

The word list, meanwhile, drew from the forms presented in (1) and (2) above, and minimally included *locta*, *dakta*, *pindac*, *tamok*, *toxión*, *mekso*, and *tic*.

Nine of the ten informants employed Madrilénian velar softening in spontaneous conversation, as well as when reading the words *directiva*, *octubre*, and *reproducción*. In addition, six of the nine read *facsimilar* with [θs] and one read *Isaac Peral* with word-final fricative [θ]. Not one of the speakers pronounced the words in (5) with other than final [k], however.

These facts, together with adults' reactions to selected words in (1) and (2), make it clear that they, too, apply velar softening to syllable-final orthographic *ç* but, like the children, refuse to produce [θ] for *k*. The most convincing evidence yet, in fact, may be these speakers' natural reading pronunciations of *facsimilar*, which, as I have mentioned, was realized six times with a [θs] sequence, in direct contrast with the [ks] of *mekso* and the [ks] or [s] of *toxión*. (It must be pointed out here, however, that all adults interviewed continue to accept [k] as a dialectal or stylistic variant of orthographic *ç*. I shall return to this point in the next section.)

Where the adults complicate the orthographic (*ç/k*) dichotomy suggested by the child reading study is in their refusal to admit [θ] as an alternative to the final [k] of the Mexican proper nouns (in 5) and in the word *tic* 'nervous twitch'. The latter is arguably onomatopoeic, or at least phonesthemic, given the less-than-arbitrary correspondence between its sound and meaning (cf. also [klik] *clíc* 'click', for which we would also expect no velar softening *[kliθ]). An explanation for the former is a bit more problematic.

The Mexican words in (5) clearly constitute for Spaniards a special class of foreign words whose final /-Vk/ is, for some reason, 'untouchable'. Merely marking them in the lexicon as [- native] might need some qualification, however, given that words with /kt/, /pt/, and other such *combinaciones cultas* are already considered [- native] because of their resistance to certain (morpho-)phonological rules which apply to fully 'nativized' forms (cf. Cressey 1978:90). We need, therefore, to be more specific about our

'non-native' characterization of these proper nouns, whose endings, if you will, 'might as well be spelled with a k'. Why should this be? Conceivably, the forms must be pronounced with a clear approximation to the 'original' American [-Vk] or, more plausibly, to the pronunciation given them by contemporary Mexican and other non-Castilian speakers. Another explanation might assign sound-symbolic value to these indigenous endings, which, as phonesthemes, overlap some segments in the monomorphemic words of which they are a part (cf. Janda 1985 and Joseph 1989).

Further implications of the adults' conscious and subconscious reactions to the velar softening rule are explored below.

6. Further implications.

I have highlighted the orthographic and lexical constraints which apparently compete against the natural tendency of some Castilian speakers to realize syllable-final /k/ as [θ]. Other parameters of this variable rule which need to be explored in more detail are sociolinguistic in nature and include the attitudes and perceptions of speakers which contribute to their judgment of certain pronunciations as natural or at least acceptable. At the center of a discussion of these notions must be the question of to what degree or at what level are speakers even aware that they engage in velar softening or that the process even exists.

I have already mentioned that all speakers surveyed accept [k] as (at the very least) a dialectal variant of syllable-final *g*. Curiously, however, not all speakers who do so realize that they say [doθtor], and a few of these, when presented with such pronunciations in isolation, deny that a native speaker could possibly utter such a thing. In this respect, perceptions of Madrilénian velar softening might compare with those of English speakers who flap and delete /t/ in such words as *little* and *center*, respectively, except in deliberate speech. Another similarity between the two languages surfaces as we compare the surprise of speakers of other dialects upon being presented for the first time with examples of velar softening or, say, deletion of /t/. Both rules, especially when applied to forms in isolation, may sound most unnatural, even impossible.

At the other end of the continuum are speakers who identify (perhaps subconsciously) with [θ] pronunciation of these words, regarding it as a typically 'Castilian' feature of their speech. This would have to be the case, for example--at some level of consciousness, anyway--if, indeed, Spaniards were able to pronounce a subclass of final /-Vk/ words with [-Vk] on the pattern of 'contemporary Mexican and other non-Castilian speakers' (see above discussion). Certainly Ramos Carrión considered this a characteristic feature of some elements of Madrilénian society in *Agua, azucarillos y aguardiente*, but more detailed investigation is needed to determine whether there is conscious identification of velar softening with 'Castilianness' in the same way that, say, velarization of /ʃ/ signals in-groupness for some Puerto Ricans ('puertorriqueñidad', in the words of López Morales 1987:34).

Then, too, a phonetic process may be 'automatic' without applying to every form that meets its structural description, since, as Fidelholtz 1975 and Hooper 1976 have so aptly illustrated, low-frequency items are the last to be affected by such 'low-level' processes as vowel reduction and schwa deletion in English. Consequently, we are likely to find [ə] *stronomy* but not **g[ə]stronomy*; *nurs[ə]ry* but not **curs[ə]ry*. This might serve as another partial explanation for the failure of velar softening to apply in the Mexican Spanish words in (5). *-Facsimilar*, on the other hand, is by no stretch of the imagination a

common form (witness the trouble the informants had reading it); yet it was read with [θs] more often than not. Nothing other than the speakers' fascination for orthographic/phonemic correspondence can explain the fact that speakers do not admit the same allophone [θ] for the graphemes *k* and *x* in identical contexts. At the same time, this cannot be considered a classic case of 'reading pronunciation' because the change from the /k/ to [θ] is (at some level) an automatic process for Castilians, and, I would maintain, was so long before its unique association with the grapheme *g*.

What else could explain the divergent treatment of equally nonsensical *pindac* vs. *tamok* on the one hand, and equally common *Isaac* vs. *Kodak* on the other?

7. Conclusions.

This has certainly not been the last word on Madrilénian velar softening; in fact, in this particular light, I suspect it has been the first. I have described a process which deserves attention first of all because of its pervasiveness (it has certainly become the norm for a very large segment of the population) and secondly due to its elusiveness, which stems from its sensitivity to contextual, morpho-lexical, and sociolinguistic variables. Most importantly, the present study has highlighted the special role of orthography in influencing sound change. I have shown, specifically, that an apparently automatic phonological process can be kept from applying to certain forms solely because of their spelling, even though I would maintain that the pronunciation came first and was later associated with a specific orthographic representation. This has given rise to a perception of Spanish orthography by certain Castilians that is not consistent with that of the rest of the Spanish-speaking world (or even of the rest of Spain) and which, interestingly, has effected a grapheme split which corresponds to a sort of artificial phoneme split in syllable-final position.

By exploring this phenomenon in the 1980's and 1990's, we can witness a number of interesting factors both tugging at and stifling sound change. After eliciting relevant forms, we can interview speakers about their attitudes and their intuitions, then record our findings so that the linguists of the 25th century will not have to reconstruct what was going on in the 20th century and try to convince their colleagues--based on scant evidence--that an apparently automatic phonetic process was constrained by (of all things!) an orthographic distinction that didn't exist at all.

NOTES

*For their help in designing, carrying out, and following through on the experiment that led up to this paper, I would like to thank (in chronological order of their contribution) Jim Lee, Fernando Roselló, Esperanza Morgan, Janice-Marie McDonald, Kutz Arrieta, Gustavo Villar, Conchita Lagunas, Karen Curtis, and Stacy Cherry. A big round of applause, too, for the faculty, staff, and students of both the Colegio El Porvenir in Madrid and the Colegio Cervantes in Valencia. Thanks also to David Griffin, Rich Janda, and Saul Levin for separately and maybe even accidentally convincing me that my uneasiness about Spanish /k/ was worth pursuing. (Of course, I don't blame y'all for any of this mess!) To Stacy and Tracie: thanks for the support!

¹It is also shown that women produce interdental fricatives more often than men. And, although 'we observe that the tendency toward interdentality increases as we go down the sociocultural scale' (Martínez Martín 1983:146, translation mine), interdentals

are quite frequent at every sociocultural level.

²Nor must the reader confuse the [θ] allophone of /k/ resulting from Madrilenian velar softening with the spirantized and devoiced /d/ so common in Castile in word-final position: [fel̥iθið̥aθ] *felicidad* 'happiness', [mað̥riθ] *Madrid* 'Madrid', etc. It is interesting that Madrilenians should have so many different sources for [θ], and not surprising that sometimes they should jokingly be called *madriceños* (where the *c* represents [θ], of course!) rather than *madrileños* by other Spaniards. With [θ] allophones from phonemes /θ/, /d/, and /k/, Madrid Spanish is bound to have an especially interesting effect on all Latin American and most Andalusian listeners, whose Spanish has no [θ] at all.

³I would like to thank Don Larson for bringing this example of eye dialect to my attention.

⁴This is not true of the letter combination *cc*, however, which is assumed to represent /kθ/ in Castilian. Of course, in other dialects all of *cc*, *cs*, and *x* represent /ks/.

⁵The Mexican *x* is also alleged to represent /š/, but it is not clear (to me, anyway) just how many speakers can produce this sound on command, given that it is not a phoneme of standard Spanish (even of what might be called a Mexican standard) and relatively few Mexicans speak, in addition to Spanish, the Amerindian languages responsible for the /š/ loans.

⁶Since this was actually part of a much larger study which addressed a number of specific questions about Spanish phonology, the complete word list consisted of 63 to 66 words (depending on the informant). For a detailed account of other aspects of the experiment, see Morgan and Arrieta (ms). It is important to note that all seventy informants were naive monolingual speakers of Castilian Spanish. The Valencians were interviewed partly with the idea that they would serve as a 'control group' for examining this and other aspects of Madrilenian phonology. Valencia, on the eastern coast of Spain, is historically a Catalan-speaking area and many speakers are, indeed, bilingual. The subjects of this study, nevertheless, reflect the modern linguistic situation in the region's capital city, where the majority of children are monolingual speakers of what we might call Valencian Spanish, a Castilian subsystem largely indistinguishable from Madrilenian.

⁷The one student who did not recognize *doctor* and *accidentes* right away had trouble reading altogether and was withdrawn from the study.

⁸It is not clear whether this is a geminate sound. My guess is that it is not.

⁹It should be mentioned here that although *tic* is a Modern Spanish word, it is likely that many of the children interviewed did not recognize it buried among dozens of unknown words in the test instrument. This would explain their pronunciations with [θ], which contrast, as we shall see, with adults' responses to the same token.

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COUNTER EVIDENCE FOR MORA TIMING

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1. Introduction

There has been some debate in the literature about whether the temporal organization of Japanese is governed by mora timing. Some investigators, such as Han (1962) and Port et al. (1980), have given acoustic evidence to support the existence of mora timing in Japanese, while Oyakawa (1971) and Beckman (1982) have shown that the phonetic structure of Japanese has nothing to do with mora timing. One of the fundamental difficulties in determining whether or not Japanese possesses mora timing seems to be a result of methodology. Most of the researchers who have examined mora timing tend to investigate durational phenomena which are mainly observed in Japanese without considering the possibility of the occurrence of the same phenomena in other languages which have different timings or in languages in which the syllables occur in different environments. As Hoequist (1983 a,b) has pointed out, however, it is necessary to investigate the question whether those particular phenomena cited as evidence for mora timing are inherent in a mora-timed language and not in other languages.

To date, a number of studies of acoustic evidence have been adduced to support mora timing. Among them, two durational phenomena have been cited as evidence without examining the syllables consistently in equal environments in other languages. These two durational phenomena are (1) a temporal compensation effect which is claimed to be responsible for regulating a CV mora or a word as a constant durational unit, and (2) a word duration proportionally related to the number of syllables in a word due to the fact that each mora is supposed to possess a constant duration. These two pieces of evidence are, however, obtained only from Japanese, and there has been little investigation as to whether they are inherent characteristics of Japanese or of language in general. Therefore, in this study two experiments were conducted to ascertain whether these two durational phenomena could be attributed to Japanese by examining English and Spanish.

2. Experiment I

In the first experiment, the validity of a temporal compensation effect was examined. Port et al. (1980) claim that the temporal compensation effect exists in a succession of CV morae in Japanese in such a way that adjacent vowels compensate for a consonant duration, so that a consonant and adjacent vowels are inversely related to each other. Although they found that each CV mora in a word was not a constant durational unit, they claimed that because of this effect, Japanese words consisting of the same number of morae tend to be of equal duration. Homma (1981) also claims that two-mora words tend to have the same duration due to the compensation effect. Since their claim was mainly based upon Japanese, it was tested whether these durational phenomena were inherent characteristics of a mora-timed language by examining English and Spanish.

2.1 Method

2.1.1 Subjects

The subjects were five native speakers of English and five of Spanish. All subjects were students at the University of Texas at Austin.

2.1.2 Materials

In this experiment, the three groups of test words which were used in Port et al. (1980), Homma (1981) and Otake (1988a) were employed again. All these test words were nonsense words, and a stress accent was assigned to the first syllable. The list of the test words is given below:

Group 1: basa, bata, bada, bara

Group 2: tabasaka, tabataka, tabadaka, tabaraka

Group 3: papa, gaga

These test words were embedded in carrier sentences in each language: 'This -- is big' for English and 'Esta -- es grande' for Spanish. These sentences were written in Roman letters on 3" X 5" index cards, one sentence per card.

2.1.3. Procedure

Subjects were recorded individually in a quiet room reading with normal intonation at a comfortable tempo. In order to minimize hesitations and misreadings, the subjects were instructed to read through the frame sentences until they felt comfortable with them.

Their reading was recorded on a cassette tape recorder (Sony 2100). Each sentence was read four times. During the recording their reading was carefully monitored by the author. When their reading was inappropriate due to misreading or to a different accent assignment, the subjects were told to read the sentences again.

Wide-band spectrograms were made of the recordings with a KAY Sona-Graph 7800 and the following time intervals were measured to the nearest 5 msec. Measurements were obtained for all segments: (1) the duration of VOT for all consonants, (2) the duration of closure for all consonants, and (3) the duration of all vowels.

2.2 Results

2.2.1 Test words in Group 1

The mean consonant, VOT, and vowel durations of each syllable in four two-syllable nonsense words produced by four native speakers of English and of Spanish are shown in Figures 1 and 2, respectively.

In these figures, although the total word duration varies from word to word, comparing the longest word, *basa*, with the shortest word, *bada*, the range is about 10% for English and 13% for Spanish. These figures are very close to the results of the Japanese experiment reported in Port et al. (1980), which showed a range of 10%. If *basa* is left aside, the range is 5% for English, and 7% for Spanish, compared with 2% reported for Japanese in Port et al. (1980).

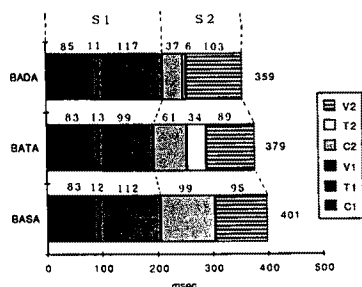


Fig. 1. Mean consonant, VOT and vowel durations of three two-syllable nonsense words produced by five English speakers.

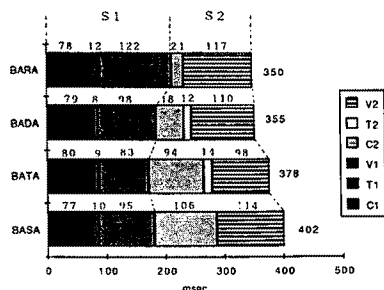


Fig. 2. Mean consonant, VOT and vowel durations of four two-syllable nonsense words produced by five Spanish speakers.

Figures 3 and 4 show the relationship between C2 in the second syllable and the two adjacent vowels, V1 and V2. As can be seen in these figures, the results for both English and Spanish show an inverse relationship between C2 and V1 and V2. This indicates that both languages show the temporal compensation effect. What these results suggest is that two-syllable test words consisting of CV sequences in English and Span-

ish tend to show a similar durational phenomenon as the temporal compensation effect.

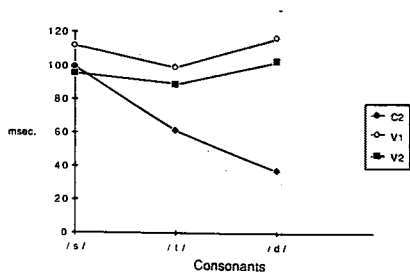


Fig. 3. Relationship between V1 and V2 as determined by C2 in two syllable nonsense words in English.

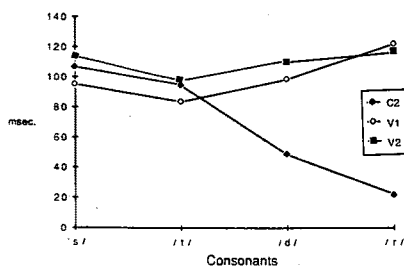


Fig. 4. Relationship between V1 and V2 as determined by C2 in two syllable nonsense words in Spanish.

2.2.2 Test words in Group II

The mean consonant, VOT, and vowel durations of each syllable in the four-syllable test words produced by the same subjects are shown in Figures 5 and 6.

In these figures, just as with the two-syllable test words in Group 1, the same two phenomena are observed. First, each word tends to show a similar duration. The range between the shortest duration and the longest duration is 2% for English and 3% for Spanish. Second, the relationship between C3 and adjacent vowels, V2 and V3, is inversely related. This is shown in Fig. 7 for English and in Fig. 8 for Spanish.

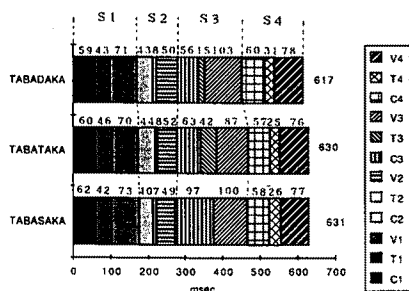


Fig. 5. Mean consonant, VOT and vowel durations of three four-syllable nonsense words produced by five English speakers.

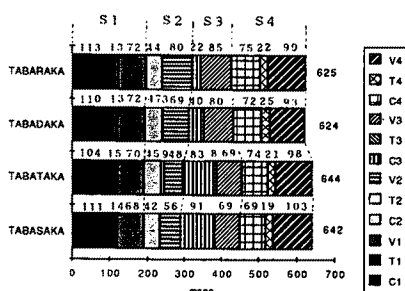


Fig. 6. Mean consonant, VOT and vowel durations of four four-syllable nonsense words produced by five Spanish speakers.

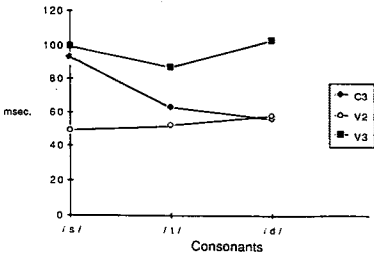


Fig. 7. Relationship between V2 and V3 as determined by C3 in two syllable nonsense words in English.

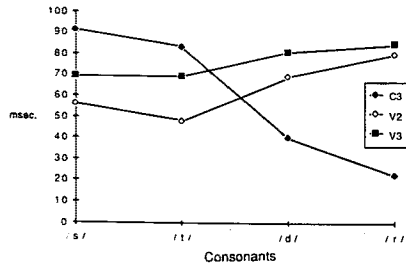


Fig. 6. Relationship between V2 and V3 as determined by C3 in two syllable nonsense words in Spanish.

2.3. Test words in Group III

The mean consonant, VOT, and vowel durations of each syllable of papa and gaga produced by English and Spanish speakers are shown in Figures 9 and 10.

As can be seen from these figures, they show that the two test words, papa and gaga, have almost the same duration in spite of the fact that they belong to different timings. The range between papa and gaga is 4% for English and 3% for Spanish. These figures are also close to the result of the Japanese experiment in Otake (1988a), which showed a range of 3%. These results also suggest that the durational phenomenon cited as the temporal compensation effect in Homma (1981) is not an inherent durational phenomenon in Japanese, but rather a language universal phenomenon.

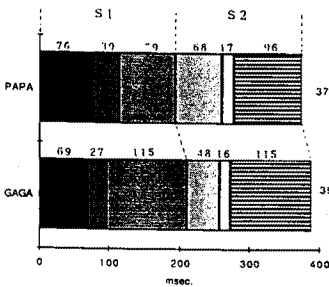


Fig. 9. Mean consonant, VOT and vowel durations of two two-syllable nonsense words produced by five English speakers.

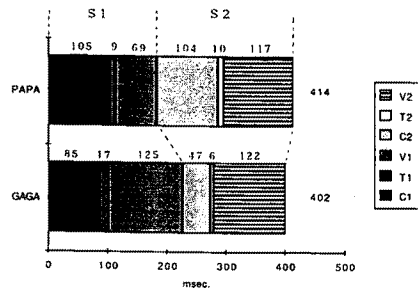


Fig. 10. Mean consonant, VOT and vowel durations of two two-syllable nonsense words produced by five Spanish speakers.

3. Experiment II

In the second experiment, the relationship between a word duration and the number of syllables in a word was examined. In Port et al. (1987) the claim was made that a word duration is proportionally related to the number of morae in a word in Japanese and that this is evidence for mora timing. It may be true that this durational characteristic was not observed in the earlier studies of English (Lehiste, 1972; Port, 1981; Klatt, 1976). However, it seems to be too early to conclude it because these two languages have been examined by using the test words whose syllable structures were not identical. If the syllable structures of these two languages are constrained in the same manner and yet they have a different durational characteristic, it is safe to conclude that it represents a certain timing. Thus, in the second experiment, it was tested whether a word duration is proportionally related to the number of CV syllables in a word in English and in Spanish.

3.1 Method

3.1.1 Subjects

The subjects were five native speakers of English and five of Spanish. All subjects were students at the University of Texas at Austin.

3.1.2 Materials

Three groups of test words were devised in such a way that the number of syllables consisting of a CV sequence increased from three to five syllables. All of these test words were nonsense words, and a stress accent was assigned to the first syllable. The list of the test words is given below:

- Group I: takata, takataka, takatakata
- Group II: katana, katanashi, katanashika
- Group III: kakushi, kakushido, kakushidoko

These test words were embedded in carrier sentences in each language: 'This -- is big,' for English and 'Esta -- es grande,' for Spanish written in Roman letters on 3" x 5" index cards, one sentence per card.

3.1.3 Procedure

Subjects were recorded individually in a quiet room reading with normal intonation at a comfortable

tempo. In order to minimize hesitations and misreadings, the subjects were instructed to read through the frame sentences until they felt comfortable with them. Their reading was recorded on a cassette tape recorder (Sony 2100). Each sentence was read four times. During the recording their reading was carefully monitored by the author. When their reading was inappropriate due to misreading or a different accent assignment, the subjects were told to read the sentences again.

Wide-band spectrograms were made of the recordings with a KAY Sona-Graph 7800 and the following time intervals were measured to the nearest 5 msec. Measurements were obtained for all segments.

3.2 Results

The relationships between word duration and the number of syllables in the words in the three groups of test words produced by English and Spanish speakers are shown in Figures 11 through 16.

There are three obvious features in these figures. The first is that the duration of the three test words with the same number of syllables is nearly equal regardless of the number of syllables in the word. The second is that the word duration of each test word and the number of syllables in the word are proportionally related in spite of the fact that these languages are supposed to have different timings. The third is that each syllable duration of the three test words with a different number of syllables also tends to have the same duration. What these results suggest is that if a word consists of a CV sequence, and language-specific effects are ignored, it is very likely that the durational characteristics of CV syllables are not determined by timing.

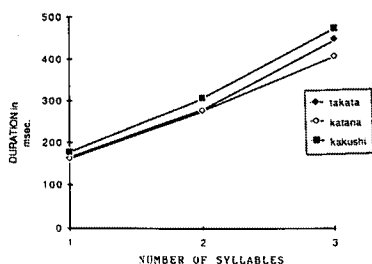


Fig. 11. Duration of three syllable test words for the three series of words pooled across five English speakers.

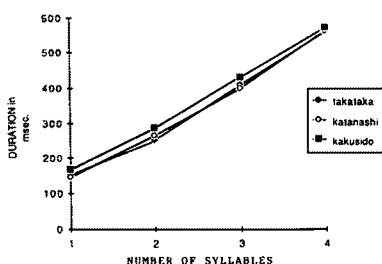


Fig. 12. Duration of four syllable test words for the three series of words pooled across five English speakers.

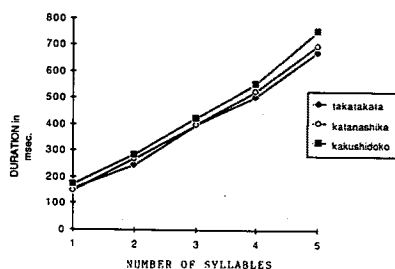


Fig. 13. Duration of five syllable test words for the three series of words pooled across five English speakers.

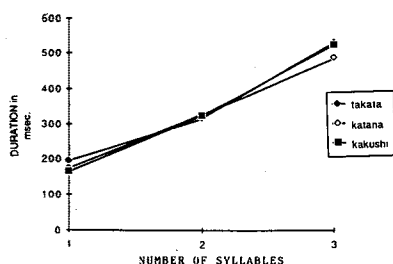


Fig. 14. Duration of three syllable test words for the three series of words pooled across five Spanish speakers.

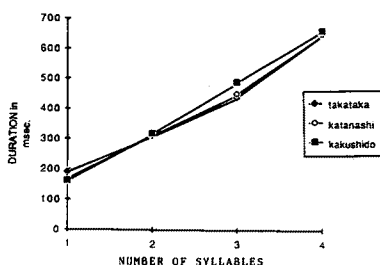


Fig. 15. Duration of four syllable test words for the three series of words pooled across five Spanish speakers.

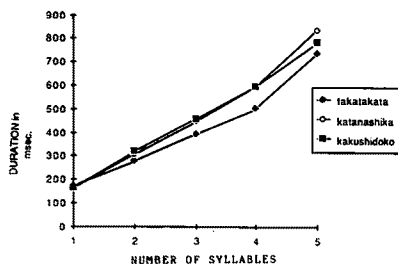


Fig. 16. Duration of five syllable test words for the three series of words pooled across five Spanish speakers.

4. Discussion

In this study two experiments were conducted in order to test the hypothesis that the durational phenomena cited as evidence for mora timing are inherent durational characteristics of Japanese by examining English and Spanish.

In the first experiment it was tested whether the temporal compensation effect claimed by Port et al. (1980) and Homma (1981) occurred in English and Spanish, each of which possesses a different timing. Unlike their findings, the experiment in this study has shown that it can be found not only in a stress-timed language, but also in a syllable timed-language. What this result suggests is that the durational characteristics of a string of CV syllables is simply determined by the components of a syllable rather than by its timing. This finding is supported by the results in the Arabic experiment in Otake (1988a), which also showed the same phenomenon.

In the second experiment, it was tested whether word duration is proportionally related to the number of syllables in words in English and Spanish. Port et al. (1987) assumed that this is a language specific phenomenon only observed in a mora-timed language. Contrary to their claim, however, the results in this study have also shown that it can be found not only in Japanese but also in English and Spanish. The second experiment also demonstrated that when a certain number of syllables were combined in different words, no matter how many syllables were combined, the duration of the test words tended to be equal, even in English and Spanish. What these results suggest is that if the syllable structures of these languages are equally constrained, the durational phenomena may be determined by the components of syllables. These results support Dauer's (1983) claim that the syllable structure of a given language is responsible for its rhythmic impression.

5. Conclusion

Two durational characteristics cited as evidence for mora timing were examined in English and Spanish in order to test whether these characteristics were unique to mora timing. The results of this study have shown that these phenomena are observable not only in a mora-timed language but also in stress- and syllable-timed languages. These results suggest that these phenomena may have nothing to do with mora timing, but may be a universal durational characteristic of languages.

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WHAT IS KEY: A LOOK AT PHONOLOGICAL AND SEMANTIC GRADIENCE

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One of the greatest stumbling blocks for the linguist who enters into a description of the Intonation of a language is the inherently gradient characteristic of the spoken medium. **Contrast** and **cline** are so subtly entwined that it can be difficult to tell them apart. Minor fluctuations in the pitch, or the loudness, or the duration, or even the voice quality can alter our interpretation of an utterance. Sometimes the alteration is as drastic as the difference between:

1) He isn't **drinking** because his **mother** died.

and

2) He isn't **drinking** because his **mother** **died**.

or between:

3) You're **going**.

and;

4) You're **going**?

These kinds of differences are the most straight forward, and they can be explained in terms of contrastive choices from a system of pitch movements in almost every intonational model. The more non-contrastive fluctuations of pitch, such as:

5) You're **going**.

versus 6) You're **go_{ing}**.

are treated as gradient variation within a category, and their meaning is then interpreted as a modification of, or, an addition to, the primary meaning assigned to the tone contour.

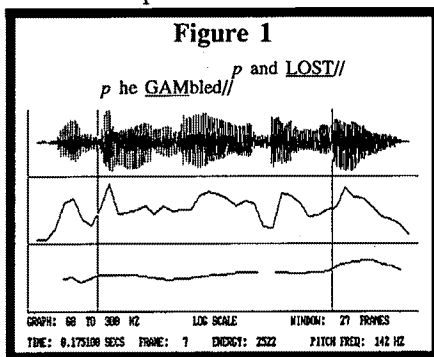
Key is a term that gained popularity among linguists in their discussions of Pitch gradience; however, it has since lost much of its technical usefulness because of the breadth of unrelated meanings encompassed by the label. And so, having introduced the term in the title of this paper, it is now best to abandoned it as a technical term, in favour of

more specific labels such as: **pitch height**, **pitch width**, and **contour shape**. This paper persists in the use of the term "**Key**" only as a point of departure for discussing Pitch gradience. An instrumental analysis of the different aspects of pitch gradience is provided in order to help clarify the relationship between gradients and the contrasts of which they are a part.

One particular use of the term **Key** derives from observations about the height of a speaker's baseline in relation to their general voice range. **Baseline** can be thought of as the pitch level of unaccented syllables that forms the platform from which pitch obtrusions are heard. For Pike, **Key** represented:

"a general pitch of the voice ... that may cause a contour as a whole, or an entire conversation to be high or low or medium in pitch... The height may vary from sentence to sentence in the speech of a specific individual, or may even change in the middle of a sentence". [1947:76]

To this notion of the gradient height of a speaker's baseline, Brazil, Coulthard and Johns [1980] proposed a further specification for the term **Key**. They suggested that the same three points of contrast (high, mid and low) could be used to establish a meaningful comparison between tone units. **Key** becomes a measure of the speaker's prior expectation of the information in the second tone unit being related to the information of the first tone unit. This expectation is interpreted as either contrastive, additive, or equative, depending on the relative height of the second tone unit.



Figures 1, 2 and 3 exemplify the system of **Key**¹ outlined by Brazil et al. Within each Figure there are three graphs: the top graph represents the waveform display, the middle graph shows the intensity, and the bottom graph depicts the pitch movement. It is the bottom graph that is of particular interest in this discussion of pitch gradience. A vertical line has been drawn through the two points where the perceived tonics begin. What is immediately apparent from the three graphs is that there is indeed some phonetic correlation for this description of **Key**. The first tonic establishes a baseline and the second tonic completes its pitch movement either above,

¹

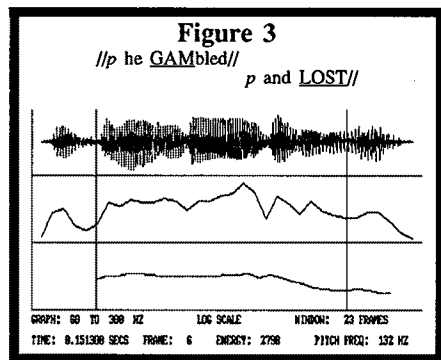
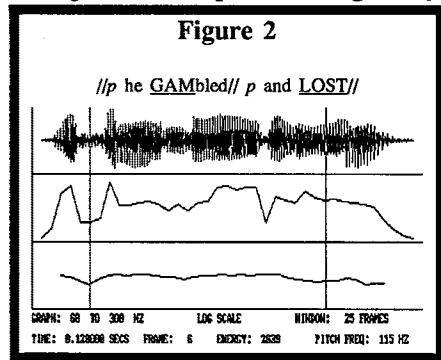
The three examples were taken directly from the tape recordings that accompany the 1980 work, where they appear [1980:65] in support of the internal significance of **Key**.

below or even with the initial baseline. Figure 1 exemplifies a **High Key**, and the meaning of the utterance "he gambled and lost" carries with it the secondary meaning that this series of events was somehow contrary to our expectations. Figure 2, on the other hand, with its **Mid Key** offers an interpretation of "he gambled and lost" in which the two facts are merely related as additive. The **Low Key** of Figure 3 introduces a degree of expectedness about the equative relation between the two processes expressed in "he gambled and lost".

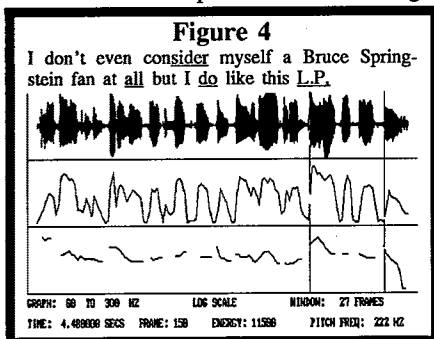
What is unique to this view of gradient pitch height is its relation to the previous tonic segment. Rather than expounding the gradient relation within a single tone unit, this version of **Key** seeks to relate the informational expectancy between the meanings contained in adjacent tone units.

Brazil, Coulthard and Johns also contend that a selection of **Low Key** may indicate the termination of a turn or an exchange. My own data support the relationship of low terminal pitch with an interactional boundary, but instrumental analysis shows a distinct difference between the **Low Key** that carries the inter-tonal meaning of "equative" and the low pitch associated with termination. Low termination can be explained from the perspective of pitch gradient within a single tone. If, as Bolinger [1986:237] contends, "the depth [of a final fall] depends on the degree of finality intended", then a fall to a terminal pitch would be as final as one can get.

Figure 4 is an example taken from a radio monologue and illustrates a strong case for treating **terminal pitch** as part of the height gradient of a single tone. Vertical lines have been drawn at the onset of the perceived tonic syllables (underlined in the caption). We can see that there are two fluctuations of baseline, one extending through the words "I don't even consider myself a Bruce Springstein fan at all but", and the other extending over the words "I do like this L.P."



Notice that the final fall in the utterance drops well below either of the two baselines, and terminates at the very bottom of the speaker's voice range. This would seem to be quite a different phonetic phenomenon from that just described as **Key**. Rather than relating the tonic onset height to its baseline, and then, relating that baseline to a preceding one in order to judge a relationship of expectedness between sequentially presented facts, pitch height, in this instance is concerned with the terminal height of a falling contour in relation to its own baseline only.



The combination of onset height and terminal height describes the width of a specific pitch movement in terms of its range. For Halliday, it is this range that is the phonetic realization of the system that he calls **Key**². This system of **Key** operates from the premise that the width of the pitch movement is directly proportional to the intensity of the general meaning assigned to the contour in its paradigmatic context. Though Halliday only develops the system to differentiate degrees of fall, a more complete view of this type of pitch gradience is expressed by Bolinger:

"The higher the rise, the greater the exasperation if it is a statement, the greater the surprise or curiosity if it is a question. The lower the fall the greater the certainty or finality if the utterance is a statement, and the greater the confidence if it is a question". [1986:240]

Interpreting gradience for rising contours in English is not quite as simple as it would at first appear. Many models recognize two distinct types of rises, not because of contrastive differences in the shape of the two contours, but rather because of gradient differences associated with the pitch range of each. For both Halliday [1970] and Ladd [1980] a distinction can be made between **high** and **low** rises based on the single gradient feature that each author calls **height**. However, the term **height** does not describe the same phenomenon in the two models. In Halliday's model the phonetic difference between the two rising tones is assumed to be the height of the terminus of the rise; a low rise is generally narrow in width and therefore

²

In fact, Halliday uses the term **Key** in two distinctly different ways. **Key** can be either a description of the gradient feature of pitch range (height & width) [1970] or a system that relates different tone choices for the same speech function by considering the additional semantic features inherent in each tone choice [1985].

usually ends around the speaker's mid range, while a high rise is much wider, and therefore, it terminates much higher.

Halliday's **High Rise**: Question, Tone 2

- 7) it's all taken **care** ^{of}?

Halliday's **Low Rise**: Reassuring Statement, Tone 3

- 8) it's all taken **care** of.

My instrumental analysis of the examples presented by Halliday [1970] in support of this difference between the two rises is not as conclusive as one would expect with a contrast. His low rise often has a terminal height that is equally as pronounced as that of the high rise, and as often as not the two share a very similar range, both starting low and rising high.

In Ladd's model, the difference between a high rise and a low rise is specified by the height at which the rising contour begins relative to the preceding syllables, rather than the height at which the rise ends. The terminal height of the rise can then be treated as the gradient aspect of the contour and therefore functions in much the same way as suggested above by Bolinger. Ladd's strongest argument for perceiving the two rises as separate contours is based on their functionally contrastive use. He presents the following example of the difference between a rise used in a question and a rise used in a contradiction [1980: 111].

Ladd's **High Rise**: Question

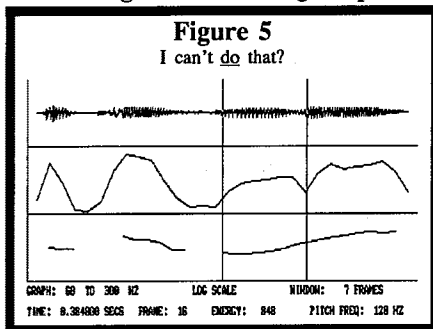
- 9) I can't ^{do that}?

Ladd's **Low Rise**: Contradiction

- 10) I can't _{do that}.

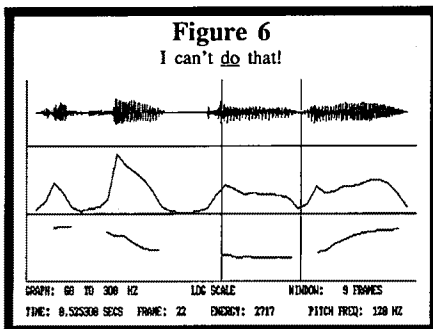
Again, the gradient feature of height (this time its the onset height) does have a degree of reliability in differentiating between the "question-like" and "non-question-like" uses of rising contours in the context of a declarative syntax. However, my efforts to instrumentally analyze the different speech functions and intensifications that can be realized by a rising pitch movement have led me to conclude that the functional impetus inherent in Ladd's **high rise** does not require the onset height to be above the baseline, or in fact even stepped up to. In my attempts at duplicating the pattern described in Example 9, I was unable to produce a high rise that started above the baseline set by the first few syllables. It was normal for the contour to be

offset from the preceding syllables by a slight drop in pitch. Nonetheless, my examples of an unmarked version of Ladd's **high rise** realizing a question did consistently start above the height of similar examples of the **low rise** realizing a contradictory statement. In Figures 5 and 6, the vertical lines delimit the word "do" in each speech envelope. In Figure 5, the tonic syllable "do" is marginally higher (8 hz.) than that of Figure 6. The range of both rises is also quite comparable; both rise approximately 100 hertz.



It would seem that there is some instrumental support for Ladd's claim that the gradient feature of pitch height is associated with the contrastive functions realized by rising contours. However, the pitch onset height itself is not necessarily a sufficient feature to establish the contrastivity. In an informal test, where a variety of examples was created in which the height onset of the rise was as low as possible, and the terminal height was as high as possible, the all-or-

none difference between a contradictory statement and a question remained unblurred. In short, the two contours still sounded different enough to be unmistakable. A closer examination of the pitch movement occurring on the tonic syllable points to the most noticeable difference between the two rising contours. In Figure 5 the tonic syllable starts with a level pitch and then rises about 25 hertz, establishing the slope for the remainder of the rising pitch movement. Conversely, the tonic syllable in Figure 6, representing the contradictory statement, remains low and level. This difference in the **shape** of the tonic syllable proved to be a fairly consistent discriminator between the declarative question and the declarative contradictory statement³. Therefore, we can conclude that the difference between these two examples is one of gradient variation within the same category, based on the contour's shape rather than a question of intonational contrast, hinging on pitch height, as suggested by either Halliday or Ladd.



3

Gussenhoven [1983] refers to a similar gradient feature as a type of contour delay.

Variations in the shape of a contour have been noted to have a gradient effect on the meaning of a complex contour⁴. Ladd [1980:111] has discussed the gradient feature of "scoop", a type of humped descent that is a variation of a simple fall. Actually, the final "falling" tonic in the sample of a **high key** presented Figure 1 is a good example of the effect of "scoop". By the same token, the rise-fall-rise contour (Halliday's Tone 4, Pike's ⁰2-4-3, Liberman & Sag's contradiction contour, Pierrehumbert's L*+HLH%) often undergoes gradient changes in its general shape, resulting in a subsequent modification of the general meaning of the contour. Bolinger⁵ has suggested that there may be as many as six phonetic modifications possible for this tune. The scope of this contour gradient ranges between two semantic extremes:

from

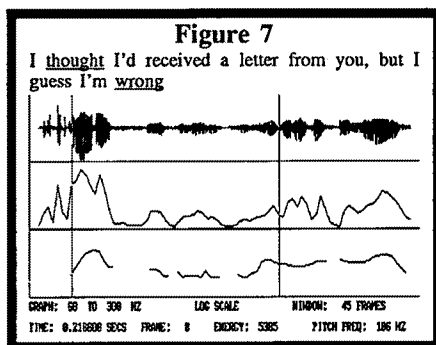
11) I ^{thought} I'd received a letter from you.

to

12) I ^{thought} I'd received a letter from you.

Example 11 carries with it the positive implication "**and I was right**", while Figure 12 leans more strongly towards the negative implication "**but I guess I'm wrong**". The mid ground is realized by a high level tonic syllable and results in an ambiguity of implication.

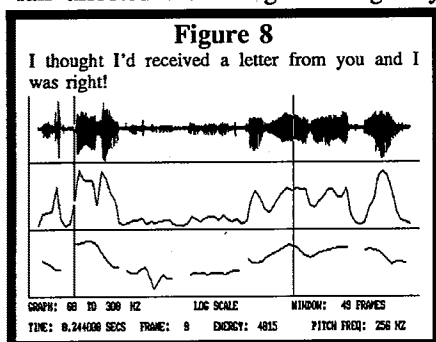
Though it was not possible for me to accurately duplicate all six of Bolinger's gradient forms, it was possible to generate the two extremes and the mid ground. The crucial factor in establishing the implicatory meaning seems to rest on the direction of the pitch movement of the tonic syllable, as can be seen clearly in Figures 7 and 8. A falling tonic syllable carries with it a positive attitude towards the logical implication, while a rising tonic syll-



⁴ By "complex contour", I mean nothing more technical than a contour that consists of an identifiable pattern of pitch movements.

⁵ reported in Bailey [1977:31].

able tends to imply a negative implicatory outcome. Though it is still unclear as to exactly which gradient features are functioning, varying the degree of the rise or fall did affect the force of the attitude conveyed, while varying the onset height of the initial rise or fall affected the strength of logically related implication. Vertical lines have been drawn at the onset of the tonic syllable "thought" and directly after the word "you", to delimit the first tone unit. For the reader's interest, and so they can independently judge the characteristics of the gradient features of baseline, contour height and width, as well as the gradience of contour shape, I have included in both Figures the phrase that is implied by their gradient shape.



This paper has briefly considered three features of pitch gradience: height, width and contour shape. All three have been shown to play a role in our interpretation of Intonational contrasts. It has attempted to clear up some of the terminological problems that have developed from previous discussions of Pitch gradience. It has focused specifically on the non-technical use of **Key** and the confusion over the term **height**. The paper has relied on an instrumental analysis of the auditorily identified contours in order to support its interpretation of gradience. It has further indicated the inherent difficulty of using gradient features, such as height, to identify all-or-none functional contrasts that are realized by Intonation. The findings of this paper are far from conclusive, but they do indicate the importance of understanding the contribution of Pitch gradience to the meaning of Intonation.

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VI

PRAGMATIC PHONOLOGY

Intensification, Contrast, and Metaphor
in Tarahumara
Comparisons of Dissimilarity

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0.0 Introduction

In a previous paper (1988) I discussed comparisons of similarity in Tarahumara, a Southern Uto-Aztecan language spoken in northern Mexico. That paper focused on utterances that contain assertions of similarity. In this paper I discuss the semantics and syntax of comparisons of dissimilarity in Tarahumara.

0.1 Comparison

Utterances expressing comparisons commonly realize semantic propositions or parts of propositions that involve three main types of constituents: a part that is COMPARED (Cmp), a STANDARD (Std) of comparison, and a RELATION (Rel) between the COMPARED and the STANDARD.

In utterance (1), neheko ...cerahpé sahpú ra'ica comprises the COMPARED proposition; muhé invokes the STANDARD; and the statement of relation is mapuregá. The COMPARED proposition is asserted, and both the STANDARD and the statement of RELATION are at least partially included for overt mention.

- (1) neheko mapuregá muhé cerahpé sahpú ra'ica
 I rel prt you intens fast talk
 'I talk as fast as you'
 'I talk very fast like you'

Comparison often presupposes an implicit NORM, i.e., in this case an underlying prototypical talking speed. For example the use of sahpú in utterance (1) places both the COMPARED and the STANDARD talk-speed above the implicit NORM in intensity. Since sahpú is the unmarked term of the antonym pair kirí, /sahpú, 'slow/fast', it serves additionally to designate the scale of value intended in the comparison. Figure 1. shows these relations.

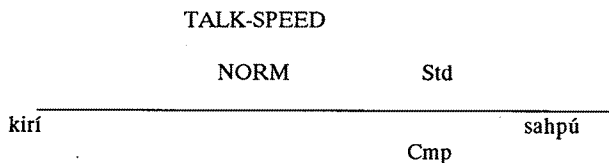


Figure 1.

1. Implicit Comparison: (Cmp only)

When only the COMPARED element in an analogical proposition is included in the SAID, i.e., when both the STANDARD and the RELATION are suppressed from mention, the comparison remains IMPLICIT. (In such cases the STANDARD and the NORM may be identical.) Implicit comparisons often involve simple identification or classification. Utterances (2) - (4) are examples of such characterization.

- (2) rankirín o'rú kam pa
Rankirin big be junct
'Tranquilo is tall'
- (3) muhé o'rú ci'rimóina ba
you big sweat junct
'You are perspiring a lot'
- (4) o'rú kam pa nócarí ba
big be junct work junct
'There's a lot of work to do'

The function of implicit comparisons of this sort is to assert or mention where on some variable scale of value a proposition or part of a proposition belongs vis-a-vis the implicit NORM. Each of the above instances of o'rú, 'big', intends both a different scale of value AND a different NORM. The monosemic commonality of the senses of o'rú includes the notion of EXCESS on some value scale, above that of the NORM. The NORM may remain imprecise, but if the NORM is too vague, the clarifying question, "as compared to what?" will make it plain that a point of reference is necessary in order to understand the utterance. These considerations are schematized (for utterance (2)) in Figure 2.

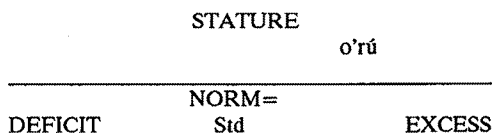


Figure 2.

2. Intensification

2.1 Intensifiers: Words

In order to be able to discuss comparisons of dissimilarity in Tarahumara it will be helpful first to examine its patterns of intensification. For gradable STATES like o'rú, 'big', or gradable EVENTS like ci'rimóinama, 'sweat', 'nocama', 'work', a divergence from the NORM may vary in intensity. The degree of DEFICIT or EXCESS is often expressed by using intensifiers. Intensification is thus a form of IMPLICIT comparison. Consider utterances (5a) and (5b).

- (5) (a) rimíhio ma noca ba
Rimijio now work junct
'Rimijio is working'
- (b) rimíhio ma we noca ba
Rimijio now intens work junct
'Rimijio is working hard'

The intensified expression we noca in utterance (5b) invokes a scale of value that characterizes the degree of concentrated labor being performed by Rimijio. (The morpheme we is often glossed as Spanish 'muy', but that would be an imprecise gloss in this case.) The morpheme, sepi, in utterance (5b') is a near paraphrase of we for expressing this degree of intensification.

- (5) (b') rimfhio ma sep noca ba
Rimijio now intens work junct
'Rimijio is working hard'

In utterances (5c) - (5f) the intensifiers we, abé, cerahpé, rasíruga, and sébari may signal degrees of EXCESS above the NORM.

- (c) rimfhio ma abé noca ba
Rimijio now intens work junct
'Rimijio is working very hard'
- (d) rimfhio ma cerahpé noca ba
Rimijio now intens work junct
'Rimijio is working very very hard'
- (e) rimfhio ma rasíruga noca ba
Rimijio now intens work junct
'Rimijio is working extremely hard'
- (f) rimfhio ma sébari noca ba
Rimijio now intens work junct
'Rimijio is working as hard as he can'

Elsewhere, sébari is used in the sense of 'full' as in a container, or 'perfect', or 'totally'; while rasíruga has the usual meaning of 'too much', or 'at the extreme'. In this sequence the intensifiers are presented in descending degrees of intensity. Figure 3. illustrates the scale. While there is general agreement among my teachers about this ordering within the progression, not all speakers will agree specifically about whether cerahpé is higher or lower on the scale of intensity than rasíruga.

English has its own conventions for pushing the boundaries of intensity to extreme values. For example, we have an array of fixed metaphorical expressions like 'dirt poor', 'dead serious', 'quiet as a mouse', 'right as rain', etc. And the constant parade of terms like 'super', 'fantastic', 'the greatest', etc., for expressing a positive value indicates that there is a pervasive need to coin fresh terms to push the boundaries of intensity ever further from the NORM. Intensified expressions at the superlative boundary like 'piss poor' and 'dead serious' are not easily subjected to explicit comparison, i.e., it is difficult to be worse than 'piss poor'

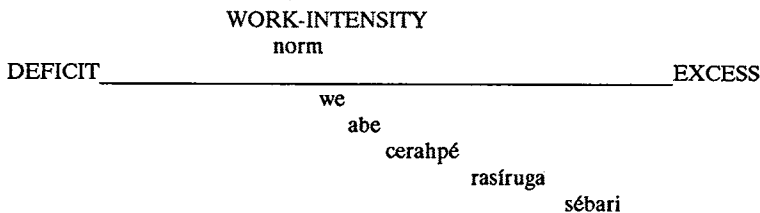


Figure 3.

or more serious than 'dead serious', just as it is difficult to be greater than 'Mohammed Ali' or more 'kick' than 'totally kick'. Just in order to check, I once asked a Tarahumara speaker whether he would accept utterance (6) in some context.

- (6) tamoko rasfuga kuneam hu pa
 we intens married be junct
 % 'We are extremely married'

I expected a negative answer. But he looked at his wife and said, "Yes, you can say that. It means, 'we have been married for a long time'." The expected reading, 'we are extremely married' strikes us as odd, because 'married' is not normally taken to be a gradable STATE. But the second reading does invoke a gradable dimension, namely the 'length of time married'.

When I first began to conduct field work with the Tarahumaras I was struck by their use of hyperbolic expressions in Spanish like, 'este es muy mucho mejor bueno', which is equivalent to something like 'that's very much better good'. So I expected to find nesting of intensifiers in Tarahumara. Tarahumara utterances often do contain such self embedded intensifiers. Consider examples (7) - (11).

- (7) miná caboci cerahpé abé wenomiam kam pa
 dist outsider intens intens rich be junct
 'That Mexican is filthily rich'
- (8) ici rarámuri rasfuga cerahpé abé resóiti kam pa
 demo Tarahumara intens intens intens poor be junct
 'This Tarahumara is dirt poor'
- (9) rasfoga abe an maací wariki newama ba
 intens intens pos know baskets make junct
 'She's an excellent basketmaker'

While these patterns are productive, they occur only infrequently in texts. It is possible to hear as many as four intensifiers in a hyperbolic expression of this sort in Tarahumara.

- (10) hana batari we abé rasfuga cerahpé rairi kam pa
 prox teswino intens intens intens intens good be junct
 'This corn beer tastes absolutely fantastic'

Non-intensified attributes that implicitly signal DEFICIT or EXCESS from the NORM, like *o'ru*, 'big', or *taa*, 'little' can also receive a comparative reading. Thus utterance (2) can, on occasion, also mean 'Rankirín is taller', or 'Rankirín is the tallest'.

2.2 Intensifiers: Bound Forms

Intensification in Tarahumara is most often expressed by means of syntactic rather than morphological patterns, but intensification may also be accomplished by means of bound forms that function as suffixes. The suffixes *-bé* and *pi/-bi* (otherwise having the sense of 'only') are used in this way. Examples (11) - (12) illustrate the cline from high to low degree of TERRAIN-ELEVATION-AND-SLOPE-ANGLE. This is an extremely salient dimension in the Tarahumara ecology (as opposed to our own), so that it is much easier to express the subtle distinctions in Tarahumara than in English.

- (11) (a) nehé cicimoko retewá wa mi re'pá re'é-riri
 I chipmunk saw far there steep + up rock loc
 'I saw a chipmunk up there (at a steep angle) on the cliff.
- (b) nehé cicimoko retewá mi cerahpé re'pá re'é-riri
 at an extreme angle + up
- (c) ... abé re'pá re'é-riri
 very steep + up
- (d) ... re'pabé re'é-riri
 quite steep + up
- (e) ... re'pabepe re'é-riri
 at an angle + up
- (12) (a) nehé co'marí retewá mi re'ré gomíci
 I deer saw there steep + down arroyo
 'I saw a deer way down deep in the canyon'
- (b) ... re'rebepe gomíci
 at an angle + down
- (c) ... re'rebé gomíci
 quite steep + down
- (d) ... abé re'ré gomíci
 sharp angle + down
- (e) ... sébari re'ré gomíci
 straight down

Figure 4. visually organizes these intensifiers on a scale.

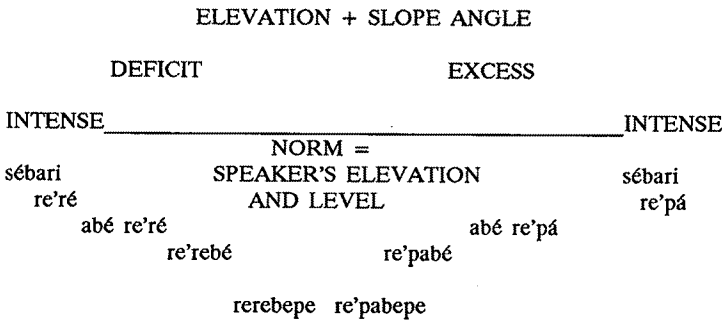


Figure 4.

The intensifying suffixes -bé and -bepe are apparently quite old, since they are not very productive. Their occurrence is limited to a set of very common attributes like mehká, 'far', muri, 'near', o'ru, 'big', taa, 'small', tiri, 'short', wiri, 'long', etc.

Another bound morpheme that is sometimes used to express intensification is the suffix -ra. For example this suffix can occur with attributes like o'ru with or without the intensifying clitic -bé, resulting in either o'ru-ra, 'very big (one)', or o'ru-be-ra, 'extremely big (one)'. The suffix -ra occurs with nouns as well, with a similar result, e.g., ono, 'father', ono-ra, 'my father'.

3. Explicit Comparison: (Cmp + Std + Rel)

When The COMPARED, the STANDARD and the COMPARISON RELATION are all overtly present in the SAID, the comparison can be characterized as EXPLICIT. In Tarahumara there are no morphemes, bound or free, that have the exclusive functions associated with the grammatical categories of comparative or superlative. Tarahumara thus lacks an exclusive -er/-est (more/most) pair. In EXPLICIT comparison the comparative reading of a Tarahumara utterance is signaled, at least in part, by means of forms that can also be interpreted as intensifiers.

One common syntactic pattern used for such comparisons is illustrated by utterances (13) through (19). The COMPARED noun group is followed by an INTENSIFIED compared ATTRIBUTE or EVENT, and then a conjunctive form ke, followed by the STANDARD noun group and the commitative postposition uga. This postposition normally expresses the role of accompaniment. The statement of RELATION appears as a discontinuous sequence of INTENSIFIER...ke...uga. The intensifier role can be filled by any of the intensifiers discussed in section 2.0; the form of the conjunctive ke may vary as well. The commitative postposition uga may on occasion alternate with the Instrumental postposition gitera.¹ The relative particle mapuré may optionally introduce the STANDARD, as in (14) an (15).

Cmp	Rel	Cmp	Rel	Std	Rel
NounGr	+	Intens	+	Attr/Event	karé + NounGr uga

- (13) (a) hanago wici abé siyona me karé bo'onákago uga
 prox field intens green be other side with
 'This field is greener than the one on the other side'

- (14) fernando rasfruga warine hu mapuré porfirio uga
 Fernando intens fast be like Porfirio with
 'Fernando is a lot faster than Porfirio'

- (15) minako abé kohci-nare ke mapuré lupita uga
 she intens sleep desid rel prt Lupita with
 'She wants more to sleep than Lupita'
 'She is sleepier than Lupita'

- (16) masirina rasfruga aparúame kam pa yolanda uga
 Masilina intens dangerous be junct Yolanda com
 'Masilina is more bitchy than Yolanda'

- (17) nehé rasfruga 'nata ke muhé uga
 I intens remember conj you with
 'I remember better than you'

- (18) piriano rasfruga ta-be-pe ke enrike uwa
 Piriano intens short intens be Enrique with
 'Piriano is a lot shorter than Enrique'

- (19) nehé pige'me cati karé frederiko uga
 I hardly any ugly be Frederico com
 'Frederico is not as ugly as me'

As is often the case with Tarahumara statements of comparison, utterance (20) is vague and thus requires a clear context for its construal.

- (20) neko ke tasi simi-nare hwáre-ci aprigá cabé
 I neg go desid Juarez loc rel prt before
 'I don't like to go to Juarez as much as before' (dissimilarity)
 'I don't like to go to Juarez as I did before' (similarity)

4.0 Implied Comparison (Cmp + Std/Rel)

In IMPLIED comparison either the STANDARD or the COMPARISON RELATION is overtly included in the utterance, but not both.

4.1 Implied by Parataxis: Contrast (Cmp + Std only)

Very frequently comparisons in Tarahumara overtly express both the COMPARED and the STANDARD, leaving only the RELATION unsaid. Utterance (21) contains an example of such an IMPLIED RELATION.

- (21) ici rorenso o'rú sa'pá kam pa neko taa kam pa
 demo rorenso big fat be junct I little be junct
 'Lorenzo is fatter than I am'

Here the use of juxtaposition in a paratactic construction provides a semantic link between the two propositions, and the juxtaposition is construed in the first reading of the utterance as implying comparison. Within this pattern the COMPARED proposition precedes the STANDARD proposition.

When asked how to say, "this field is different from that one", a Tarahumara speaker, standing in the field, will typically respond with an utterance that specifically characterizes the observable difference in a concrete way. My informant explained to me that Tarahumaras think differently about comparison when speaking their own language than when speaking Spanish. The gist of his explanation was that Tarahumaras prefer CONTRAST of IMMEDIATE PARTICULARS over abstract COMPARISON. Consider

- (13) (b) hanago wici we saroa bo'i
 prox field intens yellow horizontal position
 'This field is yellow,

bo'onákago we siyona bo'i
 dist across intens green horizontal
 that one over on the other side is green.'

'This field is different from that one over on the other side'
 'This field is not as green as that one over on the other side'

Tarahumara thus tends to select concrete, observable features of experience and contrast them overtly in simple asyndetic paratactic constructions. This may reflect the non-literate

status of the culture. Utterance (13c) is an additional variant on this pattern.

- (13) (c) *ici wicí bo'onaka we siyona*
 prox field on other side intens green
 'That field on the other side is green;

hákgó ke'me ici ru
 dist almost none prox
 this one not as much'
 'That field over on the other side is not as green as this one'

4.2 Implied by Intensification: (Cmp + 0 + Rel)

Another favorite pattern for IMPLIED comparison in Tarahumara involves the use of intensifiers within a single proposition, as in example (22). Here the COMPARED and the comparison RELATION are present, and it is the STANDARD that is implied. Any given instance of intensification in Tarahumara can additionally, on its face value, be construed as an IMPLIED comparison. This kind of IMPLIED comparison is thus extremely dependent on the context in which it is used. Consider (22)-(25).

- (22) *aparício abé a'naka pcream hu pa*
 Aparício intens far live be junct

'Aparício lives very far away'
 'Aparício lives farther away'
 'Aparício lives the farthest away'

If the immediate context requires a comparative reading of this utterance it will be construed as having a comparative or a superlative sense; otherwise the utterance will be taken -- not as an IMPLIED comparison, but -- as an IMPLICIT comparison expressing intensity, i.e., 'Aparício lives very far away'. For the IMPLIED reading the intensifier functions as a statement of RELATION between the explicitly stated COMPARED and the suppressed STANDARD. Consider also examples (23) and (24).

- (23) *minako petiri-bipi sínóiki kam pa*
 demo small intens snake be junct
 'That's a tiny little snake'
 'That's the smallest of the snakes'

- (24) *bastina abé riisí ba*
 Bastina intens tired junct
 'Bastina is very tired'
 'Bastina is more tired; Bastina is the tiredest'

For intensified expressions like these, the further the choice of the intensifier moves to the right or left of the NORM (cf. Figure 3.) the more likely it is to receive a comparative reading. Consider example (25).

- (25) (a) *hipi we/sepi rahtá*
 now intens hot
 'It's very hot now'

- (b) *hipi abé rahtá*
 now intens hot
 'It's hotter now' ('It's very hot now')

- (c) hipi cerahpé rahtá
 now intens hot
 'It's hotter now' ('It's hotter than hell right now')

5.0 Metaphor

In the *Poetics* (1458a) Aristotle defines metaphor as consisting of giving the thing a name that belongs to something else. Metaphor is a transference from genus to species or from species to genus on the grounds of analogy. Also for Aristotle metaphor represents a deviation from ordinary ways of talking.

Most current theories of metaphor (cf. van Noppen et. al. 1985) are likewise concerned with the question of how the metaphorical is distinguished from what is not metaphorical. But for people interested in language and cognition, like Lakoff and Johnson (1980), metaphors are virtually all pervasive subconscious cultural schemas. Metaphors are ways of thinking, means of structuring our everyday experiences. Metaphors are thus a part of our literal language. They point out that most of our concepts are understood in terms of other concepts. Metaphors are conventionalized, but they may also be novel; there are some sickly metaphors, but no dead metaphors.

5.1 Implicit Metaphor

But a better understanding of discourse phenomena requires us to go even further than Lakoff and Johnson in expanding the scope of the notion 'metaphorical'. Implicit NONCE metaphors are literally everywhere-present. Nonce metaphor is pervasive because utterances typically present UNKNOWN information about new PARTICULARS. Metaphor is present because such utterances necessarily involve hyponymy, and hyponymy is EXTENSION. Our construal of utterance (26) requires a hyponymic extension of the

- (26) rankirín sep rari-nare ba burito ba
 Rankirin intens buy desid junct burro junct
 'Rankirin wants to buy a donkey'

conceptual DOMAIN BURITO² to a new particular entity; the hearer thus finds out what Rankirin wants to do, by creating and activating associations to other PARTICULARS that bear the same category names, i.e., RARINARE and BURITO. Since there is no overt indication that a nonce metaphor is being created, the metaphor remains IMPLICIT. It is, however, apparent that metaphor lurks here, since the UNKNOWN phenomenon is presented in terms of DOMAIN information already KNOWN.

5.2 Implied Metaphor

Some metaphors receive partial statement and are thus more strongly IMPLIED than implicit metaphors like those in example (26). In utterance (27)

- (27) arupa ma kuneam hu o'ró ohí na'pea
 Guadalupe now married be big bear with
 'Arupa is married to a big bear'

the metaphor is highly marked as such by its use of a DOMAIN NAME, i.e., OHI, 'BEAR', that is DIFFERENT from those normally expected to appear as the experiencers of the married STATE. Here the pivot of the metaphor also involves INTENSION, and thus its contrual requires a more complex set of associations than does BURITO in example (26). A possible implication of this utterance involves the creation of an extension to the new PARTICULAR patient of 'married'.

5.3 Explicit Metaphor

Metaphors that are fully stated are EXPLICIT metaphors. Utterance (28)

- (28) rankirín apuregá onorá we noca ba
 Tranquilo like father intens work junct
 'Tranquilo works hard like his father did'

contains an explicit nonce metaphor that expresses similarity, hence it is a simile. Explicit comparisons of dissimilarity are in essence no different from similes; both are part of the same phenomenon.

6. Summary and Conclusions

Statements of comparison will be IMPLICIT, IMPLIED, OR EXPLICIT depending on the morphosyntactic means employed in their expression. Because of the pervasiveness of intensifiers, and paratactic constructions expressing contrast in Tarahumara comparisons, it is apparent that IMPLIED comparison is much more pervasive than in languages that have a morphological comparative construction. In such languages EXPLICIT comparisons play a much greater role.

Tarahumara speech contains good evidence that Characterization, Intensification, Comparison, Contrast, and Metaphor all involve essentially the same processes, namely the projection of one system onto another in order to facilitate its understanding -- to say something new about it. A conceptualization of METAPHOR that encompasses all of the linguistic means that a language has at its disposal for presenting the understanding of one phenomenon in terms of another can contribute in a significant way to our understanding of the relation between discourse phenomena and human cognitive processes.

Notes

1. As an aside I would like to mention that this pattern for expressing comparisons of dissimilarity is apparently very similar to those of the older Indo-European languages. In Proto-Indo-European Syntax, Winfried Lehmann presents evidence that PIE had not yet developed a morphological comparative construction (1974:202). Johannes Friedrich in his Hethitisches Elementarbuch points out that there are no comparative suffixes in Hittite (with perhaps a few exceptions), and that Hittite, like Egyptian, Armenian, and the Semitic languages, expressed comparisons by means of syntactic constructions. (1960:94). The favorite syntactic construction in Hittite is referred to as the Dativus-Localis Comparationis. A free translation of one of Friedrich's Hittite examples of this construction is given in (i).

- (i) Cmp NG be intens Attr Std NG dat/loc
 my soldiers are very many your soldiers at
 'My footsoldiers are more numerous than your footsoldiers'

If we compare the Tarahumara pattern in example (13) with this Hittite example the similarity is apparent.

2. Here I will follow the convention of using upper case for designating domains (types) and lower case for designating particulars (tokens).

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PROSODIC STRUCTURE, LEXICALIZATION AND
FRENCH LIAISON

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In much recent generative work, the domain of application of French Liaison is formulated in terms of syntactic or prosodic domains. Though liaison is certainly partly syntactically or prosodically conditioned, it also has at least one other conditioning factor, which is lexical. In this paper I will examine both the lexical and the prosodic conditioning of liaison. I will do so on the basis of a corpus of spoken French, the Orléans-corpus. This paper is based on about 3600 liaison-contexts from 45 interviews of this corpus. A fuller description of the corpus can be found in Blanc & Biggs (1971). More details on the liaison contexts can be found in De Jong (1988).

1. Lexical conditioning of liaison

As is shown in the examples under (1), liaison consists in the realization and the resyllabification of a word-final consonant before a vowel-initial word. Before a consonant-initial word (or phrase-finally), the word-final consonant of the first word is not realized.

- (1)a. chez_elle [(ʒe)(zɛl)] 'with her'
b. chez / lui [(ʒe)(lɥi)] 'with him'

A thing to be noted is that not all word-final consonants in French show this kind of C/Ø alternation. For instance, the final consonants of avec, honnête, sec, énorme, etc. are always realized, that is, also before consonant initial words and phrase finally. This is illustrated under (2):

- (2)a. avec lui [avɛklɥi] 'with him'
b. c'est honnête [sɛtɔnɛt] 'that is honest'
c. il est énorme [ilɛtɛnɔʁm] 'he is enormous'

Whether a word-final consonant really is a liaison-consonant (i.e. a consonant realized before vowel-initial words only), cannot be derived from anything in the context of a final consonant. It is a purely lexically conditioned property. This means that words ending in a liaison-consonant must somehow be marked for that property, as is proposed in Booij (1984), who argues that liaison consonants must be marked as such by means of a diacritic feature [+Extrasyllabic]. Thus, liaison is a lexically conditioned phenomenon in the sense that only those words which end in a consonant that are marked as [+Extrasyllabic] will make liaison with the following word.

Liaison consonants do not occur at the end of just any word. Except for a number of words that are part of frozen expressions (like pot au feu or le cas échéant), liaison consonants occur only (1) as the final consonant of words belonging to closed syntactic categories and (2) as bound morphemes. With respect to the first group, liaison consonants are for instance found after determiners (un, mon, ton, son, etc.), modifiers (très, trop, plus, moins, etc.), prepositions (chez, dans, sans, etc.) or prenominal adjectives (petit, grand, gros, etc.). With respect to the second group, the liaison consonant can be the plural marker /z/ (like in petits enfants or des draps anglais), the 1st or 2nd person verbal marker /z/ (like in tu dois aller or nous devons être), the 3rd person verbal marker /t/ (il doit aller, ils doivent aller) and occasionally the adverbial marker /ment/ (like in absolument impossible or tellement agréable).

This implies that the set of liaison words is closed, and limited to a couple of dozens. The Orléans-corpus contained about 60 different liaison words. This does not mean, by the way, that liaison is a rare or archaic phenomenon in French. On the contrary, many of the potential liaison words are quite frequent. In a recent paper, Green & Hintze (1988) observe that in their corpus liaison occurred once about every 7 seconds or so.

3. Prosodic conditioning of liaison

Liaison is not only lexically conditioned, as is suggested by the following examples:

- (3) a. il les_a donnés
b. donnez-les / à Daniel
- (4) a. il en_a donné
b. donnez-en / à Daniel
- (5) a. deux_enfants
b. deux / ou trois enfants

In the (a) examples liaison is always made. In the (b) examples, however, liaison is never made, though the (a) examples provide clear evidence for the presence of a liaison-consonant. This difference in behaviour is usually attributed to different 'degrees of connectedness' between the liaison word and the following word. In recent years the notion 'degree of connectedness' has been formalized in several ways within generative phonology, but the basic tenet is that liaison applies only within certain syntactic or prosodic domains. The relation between words within these domains is supposed to be close enough for liaison to appear.

The dominant analysis of the moment is the one where the syntactic surface structure of a sentence is mapped onto a prosodic structure. These prosodic structures consist of hierarchically ordered prosodic constituents, which function as the domain of application of sentence phonological rules.

I will exemplify this by means of the approach proposed in Selkirk (1986), who argues that the domain of application of many external sandhi rules (among others that of French Liaison) must be formulated in terms of prosodic constituents which are derived from S-structure via a set of syntax-sensitive mapping rules. These mapping rules pick out the left or right end of specific syntactic categories as the end of a prosodic domain. A first parameter specifies whether the left or right end of a syntactic category is chosen as a prosodic domain end. For French, this is always the right end. A second par-

ameter specifies which type of syntactic constituent is the end of a domain, where the different syntactic categories are those of the X-bar theory.

Selkirk claims that the Small Phonological Phrase (henceforth SPP) is the domain of obligatory liaison. This prosodic domain is derived from syntactic surface structure via a mapping rule which picks out the right end of every major category phrasal head (Noun, Verb or Adjective) as the end of an SPP. Thus, every sentence is exhaustively parsed into small chunks of words, between which liaison applies obligatorily. This is illustrated by the following examples, where all phonological phrases are between brackets.

- (6)a. (ces petits_enfants)(en_ont_avalé)(cinq)
- b. (ils_ont_été aidés)(par des_enseignants)(admirables)
- c. (tu sais)(quand_ils_inviteront)(un grand_artiste)

These examples show that liaison occurs when:

- (a)the first word ends in a liaison consonant (lexical conditioning),
- (b)the following word is vowel-initial (phonological conditioning) and
- (c)both words are in the same prosodic domain (prosodic conditioning).

A confrontation of the claim that liaison is obligatory within the SPP with the data from the Orléans-corpus, shows, however, that it is not fully correct.

4. Optional liaison within SPP

In the Orléans-corpus, liaison occurs variably after a number of words, though they were in the same SPP as the following word. This concerned (1) the forms of the auxiliary / copula être, (2) the perfective auxiliary avoir, (3) the modal auxiliaries devoir and pouvoir and (4) the prepositions. After most of the words belonging to these four categories, liaison occurred variably, with considerable differences in the rate of liaison usage between different lexical items. This is illus-

trated by the following tables which give the frequency data for être, avoir, devoir/pouvoir and the prepositions.

item	L	N	% item	L	N	%	
sans	17	18	94.4	après	2	5	40.0
dans	187	199	93.9	pendant	1	11	9.1
chez	50	55	90.9	devant	0	3	0.0
				depuis	0	10	0.0
total	254	272	93.4	total	3	29	10.3

Table 1. Liaison frequencies after monosyllabic and polysyllabic prepositions. L: number of realized liaison-consonants; N: number of liaison-contexts; %: percentage realized liaisons (from De Jong 1988).

Monosyllabic				Polysyllabic			
item	L	N	% item		L	N	%
sommes	21	29	72.4	étaient	6	20	30.0
est	784	1109	70.7	était	35	143	24.5
sont	76	153	49.7	serait	1	9	11.1
suis	47	156	30.1	étais	5	49	10.2
soient	2	7	28.6	étions	0	4	0.0
êtes	2	14	14.3	seraient	0	2	0.0
soit	2	28	7.1	étiez	0	1	0.0
sois	0	1	0.0	serais	0	1	0.0
				seront	0	1	0.0
total	934	1497	62.4	total	47	230	20.4

Table 2. Liaison frequencies after être (for L, N and % see table 1) (from De Jong 1988).

Monosyllabic				Polysyllabic			
item	L	N	% item		L	N	%
ait	1	3	33.3	avait	0	24	0.0
ont	8	76	10.5	aurais	0	22	0.0
as	0	1	0.0	aurait	0	17	0.0
				avais	0	11	0.0
				avez	0	8	0.0
				avaient	0	5	0.0
				auraient	0	1	0.0
				auriez	0	1	0.0
				auront	0	1	0.0
				aviez	0	1	0.0
total	9	80	11.3	total	0	110	0.0

Table 3. Liaison frequencies after the auxiliary avoir (for L, N and % see table 1) (from De Jong 1988).

Monosyllabic				Polysyllabic			
item	L	N	%Litem		L	N	%L
doivent	2	3	66.7	pourrait	1	1	100.0
peuvent	4	9	44.4	devait	3	8	37.5
peut	16	46	34.8	devraient	1	5	20.0
doit	13	35	37.1	devrait	1	12	8.3
peux	0	3	0.0	pouvez	0	3	0.0
dois	0	2	0.0	devrais	0	1	0.0
				pouvaient	0	1	0.0
				pouvais	0	1	0.0
				pouvait	0	1	0.0
				pouvons	0	1	0.0
totals	35	98	35.7	totals	6	34	17.6

Table 4. Liaison frequencies after modal auxiliaries (for L, N and % see table 1) (from De Jong 1988).

The question to be answered is why liaison is highly variable after almost all of the words belonging to these four categories, whereas liaison is obligatory

after almost all other words within the SPP. In the next section, I will propose a prosodic solution to this question.

5. Two prosodic domains

Though all four categories after which liaison occurred variably are closed syntactic categories, they are in at least one respect different from the other words which were mapped onto an SPP with the following word. Contrary to other closed category words they can be considered as phrasal heads subcategorizing for a complement. This is quite widely accepted for the prepositions. For instance dans un bol has the analysis $P'[P'[P[dans]NP[det[un]N[bol]]]]$: a preposition is a phrasal head which takes a nominal complement (Cf. Jackendoff 1977). This also holds for copula phrases, which are generally analyzed as consisting of a verbal head, followed by a nominal, adjectival, adverbial or prepositional complement. For example, the relevant part of c'est une limite is analyzed as: $V'[V'[V[est]NP[Det[une] N[limite]]]]$.

More recently (Guéron & Hoekstra 1988), it has been argued that in French perfective, passive and modal auxiliaries must also be analyzed as phrasal heads that subcategorize for a complement, so that in phrases like on est allé (perfective auxiliary), les gens ont eu peur (perfective auxiliary), cette machine est étudiée (passive auxiliary), elle peut être effacée (modal auxiliary) or ça doit être tout (modal auxiliary) the auxiliary is analyzed as a verbal head followed by a complement: the structure of these phrases is the same as that of a preposition phrase or a copula phrase.

Thus, the 'variable' liaison words have one thing in common that makes them different from the other words within the SPP: they are phrasal heads. This syntactic difference has immediate phonological differences: it makes liaison less likely. It also means that Selkirk's (1986) claim has to be revised: the domain of obligatory liaison is not delimited by the right end of the major category heads Noun, Verb or Adjective, but rather by the right end of all heads. Thus, at least two domains

have to be distinguished: one for obligatory liaison, where the degree of connectedness between the words is very high, and one for frequently occurring, but non-obligatory liaison, for contexts where the degree of connectedness is less high.

6. Optional liaison outside the SPP

In the Orléans-corpus, liaison sometimes occurred outside the SPP. These contexts were also head - complement sequences, but contrary to the contexts discussed in the preceding section these heads (1) belonged to an open syntactic category, and (2) had to be inflected. That liaison can appear in such contexts has already been claimed for formal speech by Selkirk (1974). Though in the Orléans corpus liaison does occur in such contexts, it is limited to two types of open category, inflected head - complement sequences only: (1) plural noun - adjective sequences and (2) contexts where the main verb avoir was followed by a nominal complement. Some examples are:

- (7)a. des langues_étrangères
- b. des verbes_irréguliers
- c. ils ont_une maladie
- d. il avait_un enfant

Liaison never occurred in head - complement sequences other than the two mentioned here. No liaison occurred for instance in:

- (8)a. dans les années / à venir
- b. ils apprendraient / un métier
- c. difficiles / à rattrapper
- d. mes connaissances / en anglais

It is possible to derive a third prosodic domain for liaison in the contexts dealt with in this section. This can be done via a mapping rule that picks out every right end of a maximal projection as the end of a prosodic domain. This brings together in one prosodic domain every phrasal head with its first (immediately following) complement.

It must however be noted that in this domain liaison is quite exceptional. As said above, it only occurs after plural nouns followed by an adjective. Besides that, in most of these contexts, we had to do with frequent combinations of nouns and adjectives (like *langues étrangères* or *pyrénées orientales*). In less frequent combinations, liaison hardly occurred. With respect to the main verb *avoir*, there liaison was quite rare (occurring in about 10% of the cases, and almost exclusively limited to ont and avait).

Thus, we have three different liaison-domains. In a first domain, liaison occurs almost obligatorily; there are hardly any words after which liaison is used variably. In a second domain, liaison is quite frequently realized. There are also large differences in liaison frequency between different words. After some words liaison is almost obligatory; after others it is almost absent, whereas intermediate liaison frequencies are found for many other words. Finally, there is a third liaison domain, where liaison is quite exceptional and limited to some very specific contexts only.

Conclusion

I hope to have shown in this paper that there is a clear relation between prosodic structure and liaison frequency: the larger the domain, the lower the liaison frequency. This reflects in fact the degree of (syntactic) connectedness between two words: the lower the degree of connectedness, the lower the liaison frequency. In this respect, the data from the Orléans-corpus provide interesting evidence for the existence of 'prosodic hierarchies'. Nevertheless, what this decrease in liaison frequency in fact reflects is that the larger the prosodic domain is, the more liaison is limited to very specific lexical contexts. Our conclusion must be that though liaison is partly prosodically conditioned, it certainly is lexically conditioned as well. Any theory aiming to describe or to explain liaison usage should take this aspect of liaison into account.

NOTES

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THE CONTRIBUTION OF RHYTHM TO READING JAPANESE

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INTRODUCTION

It seems a widely accepted view among many Japanese that, while syllabic *kana* letters have to be translated into speech code before lexical access, there is a direct visual route to semantics from ideographic *kanji* characters. In my previous studies on English, however, it has experimentally been suggested that there exists a common auditory basis underlying both reading comprehension and speech skills (i.e. listening and speaking); it is highly probable that speech coding or subvocalization during silent reading specifies a prosodic configuration of a printed sentence, and such features as speech rhythm, etc. give readers fundamental clues or frameworks to facilitate the organization of words into higher-order processing chunks (Kadota, 1984, 1986, 1987b).²⁾ This paper is a serious attempt to validate this contribution of subvocalization and rhythm to processing written Japanese, and then to indicate the possibility of universality across languages as to the relationship between speech and reading.

SUBVOCALIZATION DURING SILENT READING

McGuigan (1970), in an attempt to resolve whether silent reading involves speech coding or not, examines 27 past studies using electromyography (EMG) and reveals that almost all the empirical results detect an increase in speech articulation shown by the electrical activity of muscles like lips, tongue, larynx, etc. His own investigation (McGuigan, Keller, and Stanton, 1964) demonstrates that subjects amplify the EMG activities taken by chin and lips while reading prose in native and foreign languages. Both Levy (1977) and Slowiaczek and Clifton (1980), who forced college students to read while conducting other *mechanical* tasks like counting numbers aloud, uttering 'cola cola ...' etc., also report that reading comprehension is impaired through such articulatory tasks while listening is not, and conclude that subvocalization is occurring during silent reading.

In Locke's (1978) experiment on searching letters in a prose, a letter whose pronunciation is typically associated with the letter's name (e.g. rag, rage) is found to be detected almost three times better than a

letter whose pronunciation is not typically associated with its name (e.g. rough, ring, right).³⁾

Concerning the role of subvocalization, it is claimed that the phenomenon plays a part in the higher-order stage of integrating and organizing words into certain processing chunks; it is proved that the suppression of speech coding through a mechanical activity of counting, etc. interfere with comprehension and recall of a whole sentence, whereas the same task does not impair recognition of individual words (Levey, 1977; Slowiaczek and Clifton, 1980). Furthermore, in a large-scale investigation on deaf students, Furth (1966) reports that they are severely handicapped in their reading achievements, since only 12% reach the 4th grade level, which, in general, is not improved by additional schooling. Since the deaf are shown not to subvocalize during silent reading (Locke, 1978)⁴⁾, the above result can be interpreted as showing that deaf readers, though they know quite a number of isolated words, are specifically defective in the integrative stage of comprehension. (See Kadota, 1984 for the experiments which indicate that speech coding is certainly involved and plays a role in the stage of segmenting words into phrase-like chunks.)

SUBVOCALIZATION IN PROCESSING WRITTEN JAPANESE

Japanese writing system consists of an ideographic *kanji* which roughly corresponds to a lexical morpheme of spoken Japanese, and a *kana* which is used to represent a mora or a syllable of short duration. While *kana* stimuli involve speech recoding, it is believed that processing *kanji* characters is possible directly from visual input, and some of the past empirical studies do offer evidence supporting this idea.

Morikawa (1981), for instance, in his research on the strategies for processing *kanji*, used the phenomenon of 'Stroop Interference'; naming ink colors of stimuli, in which conflicting color words are printed (e.g. *red* in green ink), takes longer than naming ink colors of solid color words (e.g. *red* in red ink). He reports that Japanese subjects exhibit much greater interference for naming ink colors of *kanji* Stroop stimuli than of *kana* Stroop stimuli. Similarly, Nomura (1983) compared naming times for words transcribed in *kana* (e.g. やま, がっこう), and the same words written in *kanji* (e.g. 山, 学校). The results were that two-character *kana* words were named significantly faster than four-character *kana* words, but that there was no difference in naming latencies between one- and two-character *kanji* words.

Based upon the assumption that stimuli seen in the right visual-field (RVF) of each eye project to the left

hemisphere (LH), and vice versa, there are a number of tachistoscopic studies on hemispheric specialization of visually presented kanji. According to Taylor and Taylor (1983), it is known that single kanji characters, at least for simple recognition, show a left visual-field (LVF) advantage (i.e. the right hemisphere (RH) processing) and thus are perceived as a holistic visual pattern. (See also Paradis, Hagiwara, and Hildebrandt, 1985 for a summary of clinical case reports dealing with brain damaged patients.)

However, it has also been proved by many researchers that the higher, cognitive stage of processing kanji characters does require a dominant use of a speech coding channel in the form of subvocalization. Hatta (1979), for instance, conducted a laterality experiment, and concludes that there is a strong tendency toward a RVF advantage (i.e. LH processing), when the task given is to judge whether the kanji (e.g. 右[right], 左[left]) appear in the semantically congruent side of the visual field.⁵⁾ Likewise, Taylor and Taylor (1983), reviewing a number of previous empirical results, also suggest that two or more kanji forming a word, in general, are likely to represent a RVF advantage, and thus to be processed phonetically as a sequential linguistic material by the LH.

In a short-term memory (STM) experiment by Erickson, Mattingly, and Turvey (1977), it is shown that when pairs of characters in a silently read kanji list are homophonous, the subjects' (i.e. Japanese, Chinese, and Korean) recall was significantly poorer than when the list included no such pairs. The result also implies that phonetic coding is involved in the higher level of transmitting kanji words to STM.⁶⁾

RHYTHM IN SPEECH PERCEPTION AND PRODUCTION

Since Lehiste (1973) stressed the importance of speech rhythm among several prosodic features in such a way that it might play a substantial part in constructing a processing unit of speech, the role of rhythm in speech perception and production has been an issue of great theoretical interest and of serious empirical validation.

In stress-timed language (e.g. English, Russian, Arabic), it is often argued that stressed syllables follow each other at approximately equal time intervals (Abercrombie, 1967). However, Lehiste (1977), reviewing past acoustic studies, suggests that many investigators reject the existence of strict isochrony of the inter-stress intervals (ISI's) in English speech, and that English isochronous rhythm is, in principle, a perceptual phenomenon; although the ISI's increase physically as

syllables are added, listeners tend to regard the rhythm as more isochronous than it really is. (See also Donovan and Darwin, 1979; Studdert-Kennedy, 1980, etc.)

Now it is claimed that the contribution of rhythm to comprehensibility of speech can be attributed to its following two major roles:

(1) Prediction of stressed syllables: Listeners can predict the temporal positions of stressed syllables and can use that fact to 'cycle' their attention to important words because of the isochronous and cyclic nature.
 (2) Disambiguation of syntactic boundaries: Increase in an ISI through phrase-final lengthening constitutes a deliberate disruption of the expected isochronous pattern and can be used to signal the presence of a syntactic boundary (Lehiste, 1977, 1984). This dynamic view of English speech rhythm further supports the idea that it plays a fundamental role in providing a basic framework to divide words into higher-order processing units.⁷⁾

As to the distinction between 'stress-timed' and 'syllable-timed' languages, it has recently been argued that the languages of the world are not conveniently divided into dichotomous rhythmic types, but rather represent universality in their temporal organizations. Miller (1984), for instance, provides evidence that seven languages (i.e. Arabic, Polish, Spanish, Finnish, Japanese, Indonesian, and Yoruba) are not clearly assigned to either rhythmic type even by trained phoneticians. (He also shows that subjects mistakenly classify the reading style of Spanish as clearly stress-timed.) Dauer (1983), in her analysis of the data from continuous speech in English, Thai, Spanish, Italian, and Greek, again proves that the average durations of ISI's are almost constant for the five languages (i.e. between 400 and 500ms.), and that ISI's in English, a typical stress-timed language, are no more isochronous than ISI's in Spanish, a syllable-timed language, or any of the other languages investigated.⁸⁾

Besides, it is shown that there is a considerable degree of parallelism between speech rhythm and speech-accompanying body movements, based upon the observation that kinetic stresses (i.e. significant head movements) tend to occur at prominent syllables, especially at onsets and nucleuses (Azuma, Nomura, and Yamane, 1981).⁹⁾ Allen (1975), reviewing the past empirical results, suggests that there exists a neurophysiological basis underlying speech rhythm; he states that when people perform some rhythmic motor task (e.g. finger tapping) at their natural rate, the preferred intervals between acts are between 0.2s and 1.0s with an average about two acts per second (i.e. one act per every 0.5s). Likewise, it is reported that more than half of the filled feet (i.e.

feet not containing any pauses) in a reading style of English fall between 385 and 529ms with an average duration of all filled feet 520ms (Lehiste, 1977). (See also the figure by Dauer, 1983 above.) Allen (1975: 82) also notes that the measures of speech timing and tapping variability represent a moderate correlation, since "individuals with poor temporal control in their speech also tap their fingers more variably."

EXPERIMENT I

So far we have shown that subvocalization or speech coding is involved in reading English and Japanese and plays a part in the cognitive stage of segmenting words into higher-order comprehension units, and that certain prosodic features, particularly speech rhythm, which is not free from the neurophysiological constraints on human motor rhythm and appears to be somewhat universal, constitutes an essential framework for speech processing and production. Thus Kadota (1987b) administered an experiment to students learning English as a foreign language in Japan, and showed the relation of speech rhythm to reading English silently. In order to assess this contribution of rhythm to processing written Japanese, a psycholinguistic experiment was designed.

In this experiment, our hypothesis was that the irregular rhythmic beats, which might disrupt a sentence's rhythmic pattern provided by subvocalization, would reduce comprehensibility of the material, while the isochronous beats, which would correspond with the rhythmic pattern relatively well, did not affect reading performance at all.

Method and Procedure

The subjects were 144 female Japanese students at a junior college in Japan. They were divided into three homogeneous groups (i.e. Group (A), (B), and (C)) according to the scores of a pre-test of reading Japanese silently (ANOVA: $F=0.856$).

A Japanese prose of approximately 700 characters was selected for use. (See Appendix A for Excerpts.) Subjects from Group (A) read the prose silently, whereas Group (B) was requested to listen to the isochronous rhythmic beats (92 beats per minute, i.e. one beat per every 0.65s)¹⁰⁾ while reading the material silently. On the other hand, Group (C), in addition to reading the prose silently, was given the irregular, anisochronous beats which consisted of 92, 150, and 200 beats per minute alternating one another. Both isochronous and irregular beats were produced by the use of a metronome and presented to the subjects aurally through headphones.

In the present experiment, subjects were instructed first to look through the comprehension questions within

30 seconds, and then to read the prose for 2 minutes and 15 seconds on one of the three conditions above. Finally, they were required to write their answers to the questions within 3 minutes and 30 seconds in Japanese.

Each answer was scored according to a definite criterion in one of the three ways; two points were given to a correct response, one point to a partially correct response, and zero point to a wrong response. The maximum score was 12 points.

Results and Discussion

Table 1 shows means, standard deviations, and the results of statistical analyses:

TABLE 1 MEANS AND STATISTICAL ANALYSES

	(A)	(B)	(C)	ANOVA $F=10.480(p<0.005)$
N	48	47	49	t-test (B)>(A) $t=1.712(Ns.)$
X	5.792	6.447	4.633	(A)>(C) $t=2.976(p<0.005)$
SD	1.620	2.040	2.145	(B)>(C) $t=4.198(p<0.001)$

(mark range: 0-12)

As a result, it was found that the variable of rhythmic beats produced different effects on the scores of Group (B) and (C); the mean score of Group (C) was much lower than that of Group (A) or (B) ($p<0.005$, $p<0.001$), whereas Group (B), instead of reducing its performance, achieved a mean score similar or even superior to that of Group (A). The results suggest that the irregular beats interfere with comprehension process of reading Japanese while the isochronous beats do not, since the latter is somewhat compatible with the human rhythmic pattern of speech and motor. The finding replicates the empirical data on reading English prose by Kadota (1987b), and may lead us to the conclusion that the isochrony of rhythm is relevant to the mechanism of processing written Japanese.

EXPERIMENT II¹¹⁾

In Experiment II, our aim was to reveal that speech coding mechanism is involved in the cognitive stage of processing Japanese prose written in kanji-kana combination.

Method and Procedure

A total of 142 female Japanese students at a junior college were, in advance, assigned a pre-test of reading Japanese silently, and were separated into four homogeneous groups (i.e. Group (A), (B), (C), and (D))(ANOVA: $F=0.397$).

The present experiment was conducted with the same prose as in Experiment I. Subjects from Group (A) and

(B) read silently the prose written in kanji-kana combination and in kana only respectively. In contrast Group (C), besides reading silently the material printed in kanji-kana combination, was required to count from one to five repeatedly with a small voice in Japanese, and Group (D) was also given the same counting task while reading the all-kana passage.¹²⁾ (See Appendix B for excerpts from the all-kana version of the prose.)

The present experiment was conducted with the same procedure and scoring method as in Experiment 1, except for the counting task given to Groups (C) and (D). The maximum score of the test was also 12 points.

Results and Discussion

In Table 2 below are reported the means, etc. of the four groups.

TABLE 2 MEANS AND STATISTICAL ANALYSES

	(A)	(B)	(C)	(D)	t-test
N	23	36	46	37	(A)>(C) $t=6.820$ ($p<0.001$)
$\bar{X}$	5.174	3.194	2.217	2.405	(B)>(D) $t=2.174$ ($p<0.05$)
SD	1.857	1.371	1.573	1.668	(A)>(B) $t=4.316$ ($p<0.001$)
					(C)>(D) $t=0.520$ (Ns.)

[ANOVA $F=19.137$ ($p<0.005$); mark range: 0-12]

The results revealed that the mean scores of Group (C) and (D) were significantly lower than Groups (A) and (B) respectively ($p<0.001$, $p<0.05$), since the suppression of speech coding through the task of counting caused a negative effect on their reading achievements. In addition, it was also discovered that, while in the silent reading condition Group (A) was superior to Group (B) ($p<0.001$), in the counting condition there was no difference of intelligibility between kanji-kana and all-kana passages (i.e. both Groups (C) and (D) represented almost equal mean scores), which suggests that the task of counting may interfere in the speech coding mechanism in processing both kanji and kana characters. Anyway, the results seem to be interpreted as showing that a speech coding channel is certainly involved in reading Japanese silently.

CONCLUDING REMARKS

Through the survey of previous studies on speech coding and rhythm as well as our empirical results, we have indicated, though indirectly, that (1) such a prosodic feature as the isochrony of rhythm in speech and motor is involved in processing written Japanese as well as English, and that (2) this contribution of rhythm is, in part, activated through speech coding mechanism in silent reading comprehension. These conclusions seem to

invalidate the past separate treatment as to reading and speech skills (i.e. listening and speaking), and further indicate the possibility of universality across languages as to the relationship between speech and reading.

NOTES

1) Shuhei Kadota is currently a lecturer in English, English linguistics, and psycholinguistics at Ryukoku University (full-time) in Kyoto and at Konan Women's University (part-time) in Kobe, Japan. He received his M.A. in English Linguistics from Kobe City University of Foreign Studies, and has published a number of articles on the process of reading comprehension and speech production, and on FL Testing. His home address is, 7-23-3-605 Toyosato, Higashiyodogawa-ku, Osaka 533, Japan.

2) As to the nature of reading comprehension, it has commonly been maintained by many researchers that it involves a highly active task in which readers predict message and organize words into phrase-like processing chunks through the complex mechanism of hypothesis testing called "analysis by synthesis" (Kadota, 1982, 1985).

3) We assume that at least three stages are to be distinguished regarding the nature of subvocalization. In the stage of *silent articulation*, the muscular movements of vocal organs can be detected electrically by EMG. Next comes the stage in which, in spite of the complete absence of speech-motor activity, subvocalization may take the form of *auditory images*. The last stage of *reduced subvocalization* is that only the crucial parts of stimuli require an elaborate phonetic representation. In fact, it has been shown that the precise articulation is not necessarily a prerequisite for the attainment of silent reading comprehension. (See Kadota, 1987 for the detailed discussion.)

4) In fact, Locke (1978) shows that the deaf, unlike hearing readers, detected exactly as many modal (e.g. rag, rage) as nonmodal letter forms (e.g. rough, ring, right) in his letter-searching experiment.

5) Hatta (1981), and Hayashi and Hatta (1982) replicate a similar laterality research, and confirm the above conclusion.

6) Paradis, Hagiwara, and Hildebrandt (1985: 33) comments as follows: "... it appears that once the relevant variables are controlled, laterality patterns both for words written in ideographic script (i.e. kanji) and for words written in syllabic script (i.e. kana) may not differ substantially from laterality patterns for words written in alphabetic script."

7) The significance of rhythm and other prosodic variables is also emphasized by researchers in the field of first language acquisition in such a way that they are ontogenetically prior to the subsequent development of segmental phonemes and offer a vehicle to segment an utterance into sentence-like chunks (e.g. Crystal, 1975; Kurokawa, 1983; Uosaki, forthcoming).

- 8) Moreover, Wenk and Wioland also challenge the widespread notion that French is syllable-timed, and convincingly conclude that "French syllables are produced and perceived in rhythmic groups, just as those of English or, doubtless, those of any other language." (1982: 214) (See also Roach, 1982)
- 9) See also Hadar, Steiner and Rose (1984), Bolinger (1986), Kohno (1986), etc. for the correlation between speech and body movements.
- 10) In preparing the isochronous beats for Group (B), we took into account the data on the preferred rate of human motor rhythm.
- 11) Experiment II was a part of the study reported in Kadota (1987a).
- 12) As was discussed earlier, the articulatory task of counting is known to be highly effective as a device to suppress subvocalization during silent reading and is commonly employed by the researchers working in this field.

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APPENDIX A

アメリカ人は三人に一人が「日本はアジア大陸の一部にある」と思い込み、5人に一人は「日本には地下鉄網がない」と思っている。アメリカ人にとって日本はまだまだ遠い国なのだ。

その距離を少しでもちぢめるために「経済広報センター」が毎年、アメリカの社会科の先生二十一人を日本に招いている。地下鉄に乗り農家に泊まり、広島を訪れた先生が増えたことで、米国各地で早くも社会科に日本学を新設する学校が増えてきた。「日本展望」という教師用の手引き書づくりも進められている、という話をきいた。

APPENDIX B

アメリカじんはさんにんにひとりが「にほんはアジアたいりくのいちぶにある」とおもいこみ、ごにんにひとりは「にほんにはちかてつもうがない」とおもっている。アメリカじんにとってにほんはまだまだとおいくになのだ。

そのきよりをすこしでもちぢめるために「けいざいこうほうセンター」がまいとし、アメリカのしゃかいかのせんせいにじゅういちにんをにほんにまねいている。ちかてつにのりのうかにとまり、ひろしまをおとずれたせんせいがふえたことで、べいこくかくちではやくもしゃかいかににほんがくをしんせつするがっこうがふえてきた。「にほんてんぼう」というきょうしょうのでびきしょづくりもすすめられている、というはなしをきいた。

A COMPARATIVE STUDY OF HESITATION PHENOMENA
IN ENGLISH AND JAPANESE*

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Introduction

Numerous studies have been conducted on hesitation phenomena occurring in spontaneous speech. Most of these studies have focused attention on one of the following two categories. First is the analysis of distributional patterns and the duration of silent pauses, that is, non-speech intervals, searching for the encoding unit of speech production. The other is the investigation of hesitation phenomena, such as *ah*-phenomenon, changes in wording, repetitions and the like.

Among the researchers involved with the first category is, for instance, Goldman-Eisler (1968) who showed a relationship between the duration, the frequency, and the distribution of pauses on the one hand, and the difficulty of the task on the other hand. It was pointed out that the greater the difficulty of the task, the more frequent and longer the pauses are. Her research also suggests that speech production is carried out in two stages: the semantic planning of large units of discourse and the subsequent execution of speech. From this view, it should follow that long periods of hesitation should be followed by relatively longer periods of fluency due to greater opportunity for more advanced planning (Goldman-Eisler, 1967; Henderson *et al.*, 1966). The major contribution of this program is the finding that there are abstract temporal regularities in fluency and hesitation during spontaneous speech.

Other studies devoted to the analysis of silent pauses have found that the majority of pauses come at grammatical breaks in spontaneous speech. Grosjean and Deschamps (1975), in a study of French and English interviews, found that approximately 70% of all pauses occurred at major constituent breaks (defined as clause and sentence breaks), and that these pauses were longer than those occurring within constituents. Analysing the corpus of three types of speech of French politicians, i.e., political speeches, political interviews, and casual interviews, Duez (1982) also reported that the pauses that occur within phrases represent only 10% of the total number of pauses. One of his conclusions is that most pauses occur at phrase or clause junctures.

* I am grateful to Professor Robert Port of Indiana University for helpful comments on an earlier version of this paper.

The second group of the studies deals with vocal hesitations such as non-lexical intrusive sounds, or filled pauses, sentence changes, repetitions, stutters, sentence incompletions, omissions and tongue slips. It is not surprising that the various hesitation phenomena in spontaneous speech do not occur with equal frequency. *Ah* phenomena, for example, have been found to occur more often than any of the other types of hesitation (Ragsdale, 1969). Ragsdale and Silvia (1982), analysing a video taped conversation, reported that besides *ah* phenomena, sentence change and repetition are the two most frequent phenomena followed by stutter and intruding incoherent sounds. Their findings also noted the close relationship between the body movement and the hesitation phenomena.

Though Ragsdale and Silvia (1982) included kinesic elements in their study, the scope of their research did not extend to suprasegmental elements. As far as is known, there has been very little discussion of the relationship between suprasegmental elements like pitch movements and the hesitation phenomena. Nor has there been much investigation in the field of hesitation phenomena in the speech of non-native speakers.

Thus, the main purposes of the present study are (1) to examine the vocal hesitation patterns manifested in speaking one's native language and a foreign language, and (2) to study differences in the types of pitch movements.

Procedures

The subjects were ten people living in Japan. Half of them were native English speakers, two males and three females, including two Americans, one Australian, one British, and one Canadian. Their age ranged from 24 to 60, with a mean age of 36.4 years. All the native speakers of English had lived in Japan for a period ranging from 14 months to 10 years. The other half were native speakers of Japanese, one male and four females. The Japanese subjects were between 19 and 32 years old (a mean of 23 years) and had an average of 10 years of English language instruction in Japanese institutions. Some had experience living in an English speaking country, but the length of stay did not exceed one year. Both groups were asked to read aloud a short story from a familiar fable, "The North Wind and the Sun," first in their mother tongue and then in their second language, for native English speakers in Japanese and for Japanese in English. After reading the story aloud, they were asked to summarize the story, without looking at the manuscript, first in their native language and then in their second language. All subjects were advanced speakers of their respective foreign language and were skilled enough to paraphrase the text in their own words.

Levelt (1989) concludes from a review of the literature that in longer monologues speakers slowly alternate between phases in which they spend much attention on information retrieval and in-

ference (i.e., on macroplanning) and phases in which they concentrate on finalizing messages for expression (i.e., on microplanning). Thus, in genuine spontaneous speech, it is easy to speculate that some elements of macroplanning and microplanning are intertwined. By using reproduced speech, we can reduce the semantic processing load of the subjects (i.e., macroplanning) so that the focus of analysis can be confined to "micro-planning." In other words, the subjects have already in mind what they ought to say when they reproduce the stories. Their task is to verbalize the ideas.

The whole session was tape recorded and the speech was transcribed by the author. Occurrences of the 10 types of hesitation were labeled on the transcription. Pitch tracings were obtained (KAY Visi-Pitch 6087DS) and the prosodic patterns of English produced by the native speakers were compared with the one produced by the Japanese subjects.

In this research, comparison was made of the varieties of vocal hesitations used by the subjects in speaking one's native tongue and a foreign language. The following list shows the 10 categories of vocal hesitation types that were counted in this study. The 10 types are based partly on Blankenship and Kay(1964).

a. Filled pause (FP). Included in this category are various syllables used to fill time between words, such as ah, ahm, ahr, etc. In Japanese any vowel can be used as an FP, including eeh, uhu, ii: and ooh.

(e.g.) Ah one day the sun and the wind had an argument (NS-R: Native speaker-Reading)

b. Sentence Correction (SC). Speakers change the initial syntactic structure in the middle of the sentence.

(e.g.) tsugi-ni taiyo-ga... taiyo-no ban desu (NS-P: Native speaker-Paraphrase)

c. Word Change (WC). A word is substituted for another within a sentence.

(e.g.) a strong strong sunshine make made made take off (NNS-P: Non-native speaker-Paraphrase)

d. Repeat (R). Repetition of one or more complete words.

(e.g.) My my idea is continued the stranger (NS-R)

taiyo-ga taiyo-ga pokapokato (NS-P)

e. Stutter (S). Inappropriate repetition of a sound or syllable.

(e.g.) Ready, S stesteady, Go (NNS-P)

Taiyo-ga ii iiarasotte imashita (NNS-R)

f. Omission of part of a word (O). Words which were left incomplete.

(e.g.) could be decided by the f- either one that would (NS-P)

g. Lengthened Syllable (LS). Abnormally prolonged syllable.

(e.g.) the Wi:nd and the Sun (NS-P)

sono teiaahn no toorini (NS-P)

h. Sentence Incompletion (SI). The grammatical pattern is left unfinished and a new pattern begins without retracing.

(e.g.)

tabibito-ga chodoya- ... ah kitakaze-to taiyo-ga dochira-ga(NS-P)

i. Tongue Slip (TS).

(e.g.)

that could make me tafe take off this (NNS-P)

j. Other Fillers (OF). This includes vocal silence fillers such as "well" in English and "ehtoo" ,"anoh" in Japanese.

(e.g.) Well ah both the wind and the sun agreed (NP-P)

antatachi no anoh funso o kaiketsu shitekureru (NNS-R)

Results and Discussion

1. Hesitation types

The actual number of occurrences of each hesitation phenomenon was converted into frequencies. The number of occurrences of each hesitation type was divided by the total number of syllables produced in each session to yield the Hesitation Ratio. Syllables of all incompleting words, repetitions and stutters were included in the total number of syllables.

Table 1 Hesitation ratio
(English)

	native reading		non-native reading		native paraphrase		non-native paraphrase	
syllables	1373		1436		988		957	
	No.	ratio(%)	No.	ratio(%)	No.	ratio(%)	No.	ratio(%)
FP	2	0.146	8	0.557	38	3.846	34	3.553
SC	0	0	0	0	3	0.304	5	0.522
WC	0	0	0	0	0	0	5	0.522
R	5	0.364	24	1.671	2	0.202	25	2.612
S	0	0	9	0.627	2	0.202	3	0.313
O	0	0	3	0.209	1	0.101	12	1.254
SI	0	0	0	0	0	0	0	0
TS	0	0	0	0	0	0	1	0.104
LS	0	0	2	0.139	16	1.619	21	2.194
OF	0	0	2	0.139	1	0.101	11	1.149
total	7		48		63		117	

Native English speakers, as was expected, very rarely use any hesitation device when reading relatively easy and familiar text in English. As pointed out by Levelt (1989), when reading, a speaker can rely on the printed material. Lexical retrieval and

the building of syntactic constituents can be based largely on parsing of the visual input with minimization of the processing load. Our results indicate that reading is not so easy a task for non-native speakers as you can see from Table 1 that 48 occurrences of hesitation were observed in non-native reading compared with only 7 in native reading. Repetition was the most frequent phenomenon observed in the reading of non-native speakers of English, followed by stutters, and FPs. In reading aloud, both repetitions and stutters were significantly more frequent in Japanese reading than in native English reading ($t=1.9446$ $df=8$ $p<0.05$, $t=2.0924$ $df=8$ $p<0.05$). When Japanese speakers encounter unknown words, it becomes necessary for them to convert the visual input of the unknown words into articulatory output. Since they are not familiar with the pronunciation of unknown words, extra cognitive burden on the part of Japanese speakers is required, resulting in greater occurrence of repetitions and stutters when reading the text aloud.

When native English speakers reproduced the story, the most prevalent hesitation was FP, which occupies 60.3% of the total occurrences of hesitation. The highest occurrence of FPs was in line with the results of previous studies. Though syllable lengthening is sometimes overlooked as a hesitation device in previous studies, it was the second most frequent hesitation, with 25.4% of total hesitations. Thus, the present results differ from those obtained in some previous studies where the most frequent hesitation was FPs, followed by repetitions, sentence changes, and stutters (Ragsdale and Silvia 1982, Ragsdale and Sisterhen 1984). The only similar results were found in Duez (1982), where syllable lengthening was ranked second after FPs. However, in his study of the speeches of French politicians, only the number of hesitation occurrences was recorded. The ratio of occurrence was not indicated. When the Japanese subjects reproduce the story in English, FP was also most frequent, followed by repeats, lengthened syllables, and omissions. It was found that non-native speakers of English use a greater number of repeats than native speakers, though statistical significance was not detected. ($\chi^2=2.419$ $df=4$). The distributional pattern of hesitation in native reproduction and non-native reproduction differed significantly ($\chi^2=43.253$ $p<0.001$). The Japanese subjects use more repetitions and omissions than the native English speakers do. Table 1 shows that OFs in non-native reproduction were more frequent than native reproduction. This is because some Japanese subjects used Japanese versions of OFs, such as eeto and anoh even in speaking English.

Table 2 indicates the distribution of hesitation phenomena when the subjects spoke in Japanese. The number of each hesitation types was divided by the total number of moras produced in each session to yield the hesitation ratio. For instance, an FP occurred only once in the total of 3282 moras of five native reading sessions, making the FP ratio 0.03 percent.

Table 2 Hesitation ratio
(Japanese)

	native reading		non-native reading		native paraphrase		non-native paraphrase	
moras	3282		3668		2231		2277	
	No.	ratio(%)	No.	ratio(%)	No.	ratio(%)	No.	ratio(%)
FP	1	0.030	61	1.663	9	0.403	48	2.108
SC	1	0.030	0	0	4	0.179	1	0.043
WC	0	0	12	0.327	2	0.089	4	0.175
R	3	0.091	20	0.545	4	0.179	2	0.087
S	0	0	32	0.872	7	0.313	23	1.010
O	2	0.060	13	0.354	11	0.493	7	0.307
SI	0	0	0	0	1	0.044	1	0.043
TS	0	0	0	0	0	0	0	0
LS	2	0.060	74	2.017	45	2.017	65	2.854
OF	0	0	20	0.545	26	1.165	63	2.766
total	9		232		109		214	

Again, it is clear that most native Japanese speakers read the text aloud without recourse to the hesitation device. Non-native speakers of Japanese used syllable lengthening most often followed by FPs and stutters. When we compare the reproduction it is an outstanding feature found in this study that the non-native speakers of Japanese use a significantly larger amount of FPs than the Japanese speakers do ($t=1.9185$, $df=8$, $p<0.05$). OFs were also used more often by non-natives than the Japanese, though the gap was not large enough to bear significance ($t=1.01297$, $df=8$, n.s.). This probably reflects the native English speaker's general habit of using FPs often when speaking English, as reported by Ragsdale(1969). It seems that they prefer to use FPs and OFs to maintain fluency in order to minimize the breakdown of speech, rather than inserting silent pauses. On the other hand, the native Japanese speakers used syllable lengthening most often followed by other fillers, omissions, and FPs. This distributional pattern of hesitation in Japanese is quite different from the results on English. Further studies using other languages should be conducted to verify that the distribution of hesitation phenomena is language specific.

2. Pitch Movements

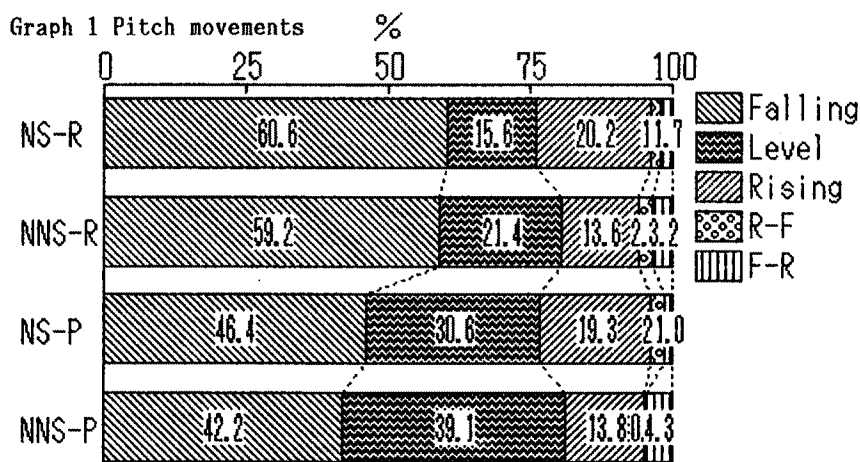
Summarized in Table 3 is the distribution of pitch movements of the four sessions when the subjects spoke in English. The nucleus of each tone unit was sorted into five pitch variations, i.e., falling, level, rising, rise-fall, and fall-rise. Pitch tracings obtained

from Visi-Pitch were referred to when determining the pitch variations.

Table 3 Distribution of pitch movements(%)

	native reading (A)		non-native reading (B)		native paraphrase (C)		non-native paraphrase (D)	
	No.	frequency	No.	frequency	No.	frequency	No.	frequency
Falling	171	60.64	199	59.23	91	46.43	125	42.23
Level	44	15.60	72	21.43	60	30.61	116	39.19
Rising	57	20.22	46	13.69	38	19.39	41	13.85
Rise-Fall	5	1.77	8	2.38	5	2.55	1	0.34
Fall-Rise	5	1.77	11	3.27	2	1.02	13	4.39
Total	282	100.00	336	100.00	196	100.00	296	100.00

(A) vs (B) $\chi^2=2.7231$ df=4 n.s.
 (A) vs (C) $\chi^2=7.1204$ df=4 n.s.
 (B) vs (D) $\chi^2=9.7504$ df=4 $p<0.025$
 (C) vs (D) $\chi^2=5.9707$ df=4 n.s.



Graph 1 gives us the visual outcome of the distribution of the pitch movement types for four categories. A chi-square test was conducted to find out if the four categories are different from each other. In reading the text aloud, no significant difference was found in the pitch movement pattern between the native English speakers and the Japanese ($\chi^2=2.7231$, df=4). More use of level tone by the Japanese can be interpreted as implying a heavier processing load placed on the Japanese subjects.

The distribution of nuclear types in native reproduction roughly matches the results obtained by Quirk *et al* (1964), Davy (1968), Crystal (1969), and Altenberg (1987). The falling tone of 46.43% in the present corpus was close to Altenberg's 47.8%, and the rising tone of 19.39% was within the fluctuations obtained from the previous studies; from Davy's 16.1% to Altenberg's 26.9%. The only difference was a relatively high percentage of level tone in the present study. This is related to the fact that the experimental situation was monologue in the present study, where the subjects were under constant pressure to continue speaking, whereas other previous studies were largely based on conversation and discussion.

It is interesting to note that in reproduction, native English speakers use level tone almost twice as much as they did in reading, but it did not yield the significant distributional difference in (A) versus (C) above ($\chi^2=7.1204$, $df=4$). The most intriguing finding is that the Japanese speakers used more than double the amount of level tone, which brought about a significant difference in pitch distribution between reading (B) and reproduction (D) ($\chi^2=9.7504$, $df=4$, $p<0.025$). It is known that falling tone is often associated with the ending of the utterance and definiteness, while level pitch means continuation of utterance and indecisiveness. Thus, to some extent, it was an expected result that the frequency of level tone increased as the speech task became heavier. As the speech task becomes heavier from reading to reproduction, both native and non-native speakers react about the same way by increasing the number of level tones, while decreasing the falling-tones. The present results show that this change was especially prominent in the case of non-native speakers.

Conclusion

To summarize, (1) it was found in this study that in reading English aloud, repetitions and stutters were significantly more frequent in non-native speech than native speech. We can assume that repetitions and stutters can work to some extent as a measurement of vocabulary familiarity of a learner, since it is an indication of the difficulty of word recognition. (2) It was also found that in speaking English, native speakers use different patterns of hesitation than non-natives, with repetitions and omissions more frequent in non-native speech. This is clearly reflected from the fact that most of the time non-native speakers are under relatively high pressure and anxiety when speaking a foreign language. (3) The difficulty of speaking a foreign language was also manifested in the increase of the level tones for the non-native speakers in reproduction. (4) The distributional pattern of hesitation in Japanese was found to be different than in English. Further studies may decide if the hesitation pattern is language specific.

Appendix

Speech samples:

i. Non-native Paraphrase(English)

One day / the North Wind / and the Sun / was arguing // The North Wind said // I'm / much stronger than you / you are // and the Sun / replied /// No er-I am st- / stronger // at that moment // a traveller appeared // very warm // said the Sun / to the travel // Warm Yes it is //

ii. Non-native Paraphrase(Japanese)

ah sono hi / anoh kitakazeto / taiyowa-ishoni / ano·nantoka / argument shimashita // ah eetoh·uhn his / kitagazewa·haij / watashiwa / ichiban·tsuyoidesu // n: iya: // tiyowa / toiimashita // watashiga / anata / o·yori·tsuyoidesu// n:n sono / nantokasonotoki / anoh /// n: ah / sonotoki

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VII

DISCOURSE AND PRAGMATICS

PLACEHOLDING AS A DISCOURSE PROPERTY

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Goal and methods of the study:

There is a growing body of research which analyzes the central role that anaphora plays in discourse (see DuBois, 1980; Fox, 1987; Givon, 1983). As a further exploration of some of the directions suggested in this literature, the current study examines a specific kind of anaphora in discourse, third person zero anaphora. The language analyzed is Tagalog which marks nominal roles by verbal prefixation, infixation, and suffixation. Thus, Tagalog is a language that is capable of generating a database for testing these hypotheses: [a] third person zero anaphora has a primary discourse function; [b] nominal role marking in the verb has the function of placeholder for unstated nominals in texts. The corpus for study consists of nine excerpted fictional texts of approximately the same length. Each sentence was analyzed into clauses. Two linguists who specialized in Austronesian languages provided validity checks both for how clauses would be defined as well as the actual analysis of sentences into clauses. The clauses were logged onto a mainframe computer and coded by source, place in text, and phrase structure description. A morphemic string search analysis was conducted which had the capacity to identify and create files of clauses with specified verbal infixes, prefixes, or suffixes. In examining nominal role marking in the verb, the phenomenon of placeholder statistically manifested itself as a force to be accounted for in Tagalog textuality.

Definition of placeholder:

Placeholder is defined as a property of textuality which maintains role reference to nominals through verbal affixation. This property makes it possible for nominals in a text to go unstated after first mention. The property has been called focus (Hopper, 1979; Naylor, 1975; Ramos, 1971) and/or case (DeGuzman, 1978). The broader conceptualization of this property has traditionally been referred to as transitivity (Hopper and Thompson, 1980), deletion (transformational syntacticians), anaphora (Halliday and Hasan, 1976), ellipsis, and topic continuity (Givon, 1983). This study maintains that third person zero anaphora is more aptly explained through its

intersentential placeholder function in discourse than through any clausal explanation as typically has been done. Moreover, the notion of zero anaphora as deletion is itself questioned by examining Tagalog native speaker intuition which suggests otherwise.

In Frame Analysis (1974), Goffman suggests that placeholder is best understood as a "sense making" property requiring a participant to connect all the disparate elements both inside and outside the text to realize meaning. The primacy that Goffman assigns to sense making in interpretation suggests that an interactant who encounters an affix in the verb with no nominal constituent in the accompanying clause will search for a referent. In the case of third person zero anaphores, the sense maker must infer the identity of the referent from previous or anticipatory mention. The construct "placeholder" represents a shift in orientation from explanations based solely on cited sentences in isolation to how interactants make sense of discourse. This reworking of analytic frame reflects a broader reorientation in the field of linguistics from the study of decontextualized sentences to dyadic communicative acts. Linguists are not alone in studying how receivers of messages make sense of them. Scholars in related disciplines similarly ask how interactants in any form of communication use language to negotiate meaning. Linguists have special insights though from the detailed study of language that scholars more interested in other normative behaviors might overlook.

Related studies on zero anaphora:

"Missing" nominals have been explained through the construct deletion. These elusive nouns are absent from the text because they are said to have been deleted. But is deletion the correct explanation for what is happening in Tagalog texts, indeed any text? For Tagalog, there is evidence to show that these zero nominals were never there to begin with and thus never had to be deleted. Bautista has shown that the narrative style of children includes explicit statement of nominals contrasted with the narrative style of adults which relies to a greater extent on placeholder. Explicit statement of nominals tends to be associated with baby talk and the simplified register of Tagalog that is used with non-Tagalog Filipinos and foreigners (Bautista, 1983). One might expect that in literary texts, which are perceived as an elaborate register in any language, that placeholder would predictably be an important property. We can all agree that there is insufficient evidence to prove the deletion is indeed a cognitive reality. Rather, we can explain the existence of deletion as a construct that has been formulated to

help analysts explain unstated nominals in texts. A second question is how is "placeholder" different from case? While it is true that case focuses on the connection between affixation in verbs and role relationships obtaining among nominals, case explanations have stopped short at the sentence boundary. They have not considered how affixation in the verb could be a manifestation of discourse constraints imposed on sentences in texts. In her case analysis of the Tagalog verb, DeGuzman quotes Chafe to illustrate an important goal of her study: "The nature of the verb determines what the rest of the sentence will be like; in particular, what nouns will be semantically specified" (DeGuzman, 1978, 23). Sentences are also shaped by their participation in texts. Constraints from textual cohesion are at least as important if not more so than the syntactic derivation of verbs in isolated sentences. This study shows that an important factor conditioning the morphology of the verb is not just the character of the verb stem (though important), but what interactants mean to communicate in conversations. Bottom up explanations which stop at the sentence boundary are incomplete. They do not give the entire top down psychological processing picture for why speakers make certain choices over others.

This is not the first study to explore the relationship between nominals and discourse. In Topic Continuity in Discourse (1983), Givón proposes a hierarchy of continuity for topics in texts. The several studies presented in this volume support the claim that the most continuous topics in texts are zero anaphores. Aoun and Fox similarly argue that coindexicality is an important feature characterizing text grammars and that given morphemic traces through government and binding, readers are expected to instantiate the argument for a clause. The next logical question to ask is how do texts allow nominals to go unmentioned after they are first introduced into the interpretive pool. This study examines one textual mechanism for maintaining reference that characterizes focus languages like Tagalog.

Evidence for placeholder:

The composition of any verb in Tagalog suggests something about the number of nominals (excluding *sa* nominals) which can accompany it (Hopper, 1979; Ramos, 1971, Schachter, 1975). The place character of verbs will change depending on the verbal focus. A two place verb in one clause might become a three place verb in another. Consider this pair of examples with the stem *dala*, first in goal focus and later in locative.

A. Goal Focus (action is oriented to the object)

Maria brought the flowers to the women in church.

Dinala ni Maria ang bulaklak sa mga babae sa simbahan.

GF	1	2	A	B
VERB	ACTOR	GOAL/TOPIC	SA NOMINAL	SA NOMINAL
brought	Maria	flowers	to women	in church

B. Locative Focus (action is oriented to a locus--here the women)

Maria brought the women in church some flowers.

Dinalhan ni Maria ng bulaklak ang mga babae sa simbahan.

LOC FOCUS	1	2	3	A
VERB	ACTOR	GOAL	LOCUS/TOPIC	SA NOMINAL
brought	Maria	flowers	women	in church

The first example illustrates that major nominal constituents can occur only once in a clause while it is common to have more than one SA constituent in a clause. Notice, in the first example, **dala** is a two place verb while in the second example it has three major nominal constituents. We know that by definition locatives, causatives, and benefactives have the potential for three major nominal constituents which can prove to be important in understanding sentences in discourse. Were we to stop here, describing placeholder as only a clause internal syntactic property characterizing the role relationships between nouns and verbs or to say simply that the differences illustrated in these examples were just a question of alternate case markings, the significance of this property would be missed.

Several linguists who study Philippine languages have observed that compared to English, written and spoken Tagalog tends to have fewer nominals (Martin, 1983; Titrud, 1979). Absence of nominals makes participant identification difficult for outsiders. I first noticed the abundance of unstated nominals several years ago when I was working on a text from the late Tagalog writer, Celso Al. Carunungan. At that time, I assumed that there was some kind of simplicity metric operating in Tagalog texts--that if the reference was already clear it did not have to be mentioned again. But upon studied reflection, I have rejected the notion of a simplicity metric as an explanation for unstated nominals in Tagalog texts. For anyone who has ever studied lowland, mainstream Philippine culture, a preferred aesthetic would be something like "thicker is better" rather than "don't repeat if it is already clear." We see this layering in Tagalog interpersonal interactions particularly where considerations of **hiya**, an important cultural control, are engaged. Saying outright is for the uninitiated. The more elaborate the dance of dodging, deflecting, mitigating, and metaphor, the more the

language is appreciated and the speaker's ability admired. Similarly, contexts, which permit and indeed which syntactically require that the known nominal constituent not be restated, are generally dense and redundant with overlapping networks. This claim is illustrated by an intriguing example from Amado V. Hernandez's Luha ng Buwaya, ('Tears of the Crocodile'), an untranslated novel first serialized in Taliba (Guardian) from June 4 to July 27, 1962.

Analysis of an excerpt:

I have been drawn repeatedly to this compelling example for reasons which I hope to make clear during the course of this discussion. I read literary Tagalog only with difficulty, but I sense that this is a very moving passage from the internal cadence of the language. Hernandez is best known as a **Balagtas**an poet. This is a form of oral extemporaneous joust in rhymed couplets to test the mettle of the competing would-be poets. The more ornate the language and delivery, the greater the complexity of the idea and sentiment, the quicker the linguistic reflex in creating clever couplets, the more the poet is appreciated by the audience. The audience assesses who has achieved the best verbal display reminiscent of two aggressive feisty roosters in a **sabong** match (a cockfight to the death). Balagtasan competitions were common in the years before the second world war. Hernandez's poetic inspiration and skill are evident in the following prose excerpt. The novel Luha ng Buwaya depicts the personal tragedies and triumphs of several different people living in a rural rice village in the heart of Luzon. One of the stories told in this novel concerns the death of Sepa, a thirty-five year old mother of four, told from the perspective of her grieving husband, Hulyan.

Excerpt

Basa si Hulyan kapagkaraka'y
pinagyaman ang asawa.

Pinunsan ng tubig na maligamgam
na may sukaang maasim.

Tinapalan sa noo ng tuwalyang

basa rin ng suka at pinainom

ng tsang mainit.

Kinutsarahan nang am ng gabi
na ayaw tanggapin ng sikmura

ng maysakit.

Literal translation

Worried Hulyan after
ministered to wife

Wiped on water warm
with sour vinegar.

Placed on forehead a
towel wet
also with vinegar and
had drink
some hot tea.

Spoon fed morning taro
dislike take the
stomach
of one sick.

All the verbs in this passage (**pinagyaman**, **pinunasan**, **tinapalan**, **pinainom**, **kinutsarahan**, **tanggapin**) are highly transitive by the criteria elaborated in Hopper and Thompson (1980). When readers attempt to interpret this passage, it is necessary to cognitively restore nominal constituents which are implied in the text but not actually stated. These "missing nominal constituents" are underlined in the English translation and in parentheses in the Tagalog text.

Balisa si Hulyan kapagkarka'y pinagyaman (MNC) ang asawa.

Hulyan was worried after he ministered to his wife.

Pinunasn (MNC) (MNC) ng tubig na maligamgam na may sukan maasim.

He wiped her with warm water that had sour vinegar.

Tinapalan (MNC) (MNC) sa noo ng tuwalyang basa rin ng suka at pinainom (MNC) (MNC) ng tsang mainit.

He placed a wet vinegar towel her forehead and had her drink some hot tea.

Kinutsarahan (MNC) (MNC) nang am ng gabi na ayaw tanggapin (MNC) ng sikmura ng mayasakit.

He spoon fed her some taro gruel but the invalid's stomach refused to take it.

For outsiders reading this passage, the many unstated nominals, where they would be required for the English translation, make the passage minimal. There is a restricted variety of English register which allows a similar lack of nouniness--the style of writing used in recipes or in sending telegrams--but it would be unusual for an ordinary novel to be written in a recipe/telegraph register. [Of course, there are exceptions to this generalization. A novelist experimenting with the medium might indeed depart from stylistic norms for effect.] For English readers of Tagalog something seems to be missing. Because of the density of alternate networks for clarifying reference, restating nominals is ungainly and even violates aesthetic and grammatical constraints. This is true for the entire database of nine literary texts. A second property characterizing this excerpt is the striking parallelism--parallel even down to "missing" nominal constituents. For mother-tongue Tagalog readers, this passage is recognized as a unit though it is represented in writing as four separate sentences.

The parallelism looks like this syntactically.

	PREDICATE	VERB FOCUS	ACTOR	TOPIC	GOAL
1a.	balisa		XXXXXX	Hulyan	XXXX
1b.	pinagyaman	goal	(Hulyan)	Sepa	XXXX
2.	pinunasan	locative	(Hulyan)	(Sepa)	tubig
3a.	tinapalan	locative	(Hulyan)	(Sepa)	tuwalya
3b.	pinainom	causative	(Hulyan)	(Sepa)	tsa
4.	kinutsarahan	locative	(Hulyan)	(Sepa)	am

The structural parallelism imparts a sense of intensification by repetition of the same structure. It enhances the attempt to elicit the reader's empathy for Hulyan's powerless situation. Notice the phonetic and metrical similarity characterizing the verbs. This phonetic resonance at the same place in each clause overlays and complements the structural parallelism. Only one major constituent is stated in each clause further enhancing the meter of the parallelism. This is no surprise since Hernandez as poet had the linguistic and aesthetic resources from the Tagalog oral tradition at his command. With the exception of the goal focus infinitive **tanggapin** in the final clause, all the other verbs are potentially three place verbs. Recognizing this, we can assume that some of the constituents are not stated and we readers must try to infer their identities from other available networks in the text. The verbal morphology allows us to identify which constituent should have been the topic and if it is not there, we can cognitively restore the missing reference needed for interpretation. For example, the locative focus of the verb **pinunasan** in sentence two indicates that a locus should be the topicalized constituent. There isn't any **ang phrase** at all in this clause, only a grammatical goal **ng tubig**. Thus, readers can infer that Hulyan is still the actor since there is no reason to assume anything else--no other participant has intervened in the development of the storyline. We can also assume the topic of the previous clause **ang asawa** is still in focus. This is what is suggested by use of a three place verb and what the term **placeholder** suggests. What appears to be minimal at first glance turns out to be complex, containing all the information needed to correctly interpret it. The same is true for other sentences in the text. Only one constituent is actually stated but the potential number of places incorporated into the verb form suggests something about how clauses ought to be interpreted. With the exception of **tanggapin** all the verbs are highly transitive, completive, goal focus, and part of the foreground. Reference to Sepa is the actual grammatical topic for most of this passage. In addition to parallelism and placeholder, these other networks reinforce the reference of "absent" nominals.

through deletion by third person zero anaphora is only partially adequate because these explanations focus on "missing" nominals rather than on the nominal reference network that is actually there in the text in the verbal morphology. Coherent, authentic, fully realized, written and spoken texts might rely on placeholder as an alternative to carry nominal reference.

Appendix A**Chronological Listing of Texts Used in the Clausal Analysis**

- 1854 Modesto de Castro. Pagsusulatan ng Dalawang Binibini na Si Urbana at Si Feliza. [The Letters of two Maidens - Urban and Feliza], Manila: Imprenta y Liberia de J. Matinez.
- 1906 Lope K. Santos. Banaag at Sikat [Light and Sunray]. Quezon City: Manlapaz Publishing Company.
- 1927 Faustino Aguilar. Ang Lihim ng Isang Pulo [The Secret of an Island]. Maynila: Sampagita Press.
- 1937 Fausto J. Galaوران. Lihim ng Kumpisalan [Secret of the Confessional]. Manila: Ramon Roces Publications.
- 1948 Macario Pineda. "Si Magat," Liwayway.
- 1969 Amado V. Hernandez. Luha ng Buwaya. [Crocodile Tears], Quezon City: Ateneo De Manila University Press.
- 1971 Celso Al. Carunungan. Satanas Sa Lupa. [Satan on Earth], Quezon City: JMC Press.
- 1978 Fanny Garcia. "Sandaang Damit," [One Hundred Dresses]. In Bilingual Contemporary Philippine Literature--Short Stories. Ed. Visitacion R. De La Torre. Manila: National Book Store, Inc., pp. 193-209.
- 1978 Jose Rey Munsayac. "Dugo ng Buwaya sa Patay na llog," [Crocodile's Blood in the Dead River]. In De La Torre, pp. 226-235.

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THE JAPANESE AFFECTIVE PASSIVE:
A FUNCTIONAL ANALYSIS

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1. Introduction and Background

Passive constructions in Japanese formed using the verbal affix *-(r)are* are often said to be of two types, affective (or adversative) and non-affective (simple passive or pure passive). Use of the affective or adversative passive presumably suggests that the subject of the verb has suffered or undergone a negative experience in some way (although some affective passives seem to be associated with positive effects), or at least that the speaker's attitude is that it was negative. The other type of passive does not suggest any special affective overtones and is usually felt to be neutral in tone. For example, the affective sentence

Chichi wa kodomo ni takai gakkoo ni nyuugakus-are-ta
Father TOP child IO costly school LOC enroll-(R)ARE-pst
'The father was subjected to his child enrolling in an expensive school'

is perceived as meaning that the father was adversely affected by the child's enrolling in the expensive school, although this is only implied, not explicitly stated. On the other hand, the non-affective

Ano syepado wa Satoo-san kara Tanaka-san ni ur-are-ta
That G.shepd TOP Mr.Sato by Mr.Tanaka IO sell-(R)ARE
-pst
'That German shepherd was sold to Mr.Tanaka by Mr. Sato'

does not imply any adverse effects for the German shepherd.

The problem is that what appears to be a single construction type, apparently involving the promotion of some non-agent participant to subject, the demotion of the agent to a *ni*-phrase (*ni* being an indirect object marker), and the use of the verbal affix *-(r)are*, is used for what according to the intuitions of native speakers are two separate ways of meaning.

The standard formulation of the problem has been, "Is there one passive or two, and how do you know which is which?" Both formal (N. McCawley 1972, Kuno 1973, Howard and Niekawa-Howard 1976) and functional/semantic approaches (Alfonso 1971, Klaiman 1987, Wierzbicka 1979) have been applied to the problem, with a great deal of controversy over definitions and over the essence of the so-called adversative connotations.

One important formal property of the affective passive that has been identified is that it frequently involves an increase--rather than a decrease, as is far more usual with passives--of syntactic valence. As in the first example given above, a non-argument to the verb can assume the role of the affected subject without the loss of any initial argument NP. Some writers have attempted to use this special property of valence increase as a basis for defining the affective passive, while others (N. McCawley 1972 e.g.) have claimed that any participant--including the direct object--can become the subject of an affective passive--or in other words, that valence increase is not a defining characteristic of the affective passive). As far as the semantics of affective passives is concerned, Klaiman (1987:406) has demonstrated that both the affected subject and the agent in these constructions must be animate or have "at least a potential for sentience" in order for them to work as affective passives. Beyond these two characteristics--a possible increase of syntactic valence and an animacy requirement for both undergoer and actor--little else has been conclusively demonstrated to distinguish the affective from the non-affective passive. However, as will be shown below, limiting the scope of the problem to the domain of passivization only--i.e. viewing the affective passive as either a pure passive or an odd pure passive--obscures the actual value of this construction in a system of voice oppositions. Our emphasis will be not on attempting to define a sharp boundary between the two but rather on examining the interplay between affective and non-affective semantics in order to gain a better understanding of passivization and voice in Japanese. To this end, we shall reformulate the question as, "What role does the affective passive play in the overall scheme of voice relations in Japanese?"

2. Data from Japanese

2.1 Structural and Semantic Characteristics

Consider the following data:

1. John ga ame ni hur-are-ta. (Kuno 1973)
John TOP rain IO fall-(R)ARE-past
'John got caught in the rain.'
2. John ga kodomo ni asa-hayaku okir-are-ta. (*ibid.*)
John TOP child IO morning-early arise-(R)ARE-past
'John had the children get up early on him.'
3. Taro ga haha ni yorokob-are-ta. (*ibid.*)
Taro TOP mother IO be-happy-(R)ARE-past
'Taro had his mother be happy on him.'
4. Taroo ga ototoo ni seikoo s-are-ta. (*ibid.*)
Taro TOP brother IO be-successful do-(R)ARE-past
'Taro was subjected to his brother being successful.'
5. Kireina ojoosan ni nak-are-ru to chotto uresii
Pretty girl IO cry-(R)ARE little-bit nice
mono da. (Alfonso 1971)
kind of
'It's kind of nice when a beautiful girl cries
because of you.' (affected = speaker)
6. Mary wa oto ni kanasim-are-ta.
Mary TOP husband IO be-sad-(R)ARE-past
'Mary was felt sad about by her husband.'
7. John ga tuma ni sin-are-ta. (Kuno 1973)
John TOP wife IO die-(R)ARE-past
'John was died by his wife' or 'John's wife died
on him.'

The verbs in the above sentences are all intransitive and the topic/affected subject NPs are "extra noun phrases" as spoken of by Kuno--in other words, non-initial arguments to the verb. These sentences are not in direct correspondence with any active sentences; for example number 7 cannot be derived from *Tuma wa John o sinda 'The wife died John'. The wa-marked participants in these sentences are not initial arguments to the non-derived verb, but are rather adjuncts, or possibly possessors as in 7. These sentences are all routinely judged affective by native speakers of Japanese. They are not all necessarily considered adversative for the undergoer; numbers 3

and 5 have rather a positive connotation, at least for some speakers. (For this reason we shall use the more recent term 'affective' following Klaiman 1987.) The point here is that passives with adjuncts or possessors as subject are nearly always judged affective, whether beneficial or adversative.

The next set of examples lacks the extra noun phrase:

8. Tanaka san wa Sato san ni kuruma o ur-are-ta.
(N. McCawley 1972b)
Tanaka HON TOP Sato HON IO car DO sell-(R)ARE-pst
'Mr. Tanaka was sold the car by Mr. Sato.'
9. Taroo wa Mary ni himitu o uciake-rare-ta.
Taroo TOP Mary IO secret DO tell-(R)ARE-past
'Taroo was told (confided) the secret by Mary.'
10. Taroo wa Mary ni uso o tuk-are-ta.
Taroo TOP Mary IO lie DO tell-(R)ARE-past
'Taroo was lied to by Mary.'
11. Taroo wa Mary ni ii sirase kik-as-are-ta.
Taroo TOP Mary IO good news listen-caus-(R)ARE-
past
'Taroo was told ["made to listen to"] the good news by Mary.'
12. Watasi wa gakkoo de manaa o osie-rare-ta.
(Kuno 1973)
I TOP school LOC manners DO teach-(R)ARE-pst
'I was taught manners in school.'

The above five examples differ from the previous set in that they do have active counterparts and in that the affected subject of the passive is marked as an indirect object in the active. The affected subject is thus an initial argument to the verb in these examples, rather than an adjunct, possessor, etc., as in 1-7, so that these examples lack the structural characteristics considered to be the hallmark of the affective passive. Nevertheless, these sentences are judged affective by native speakers. Number 8, which actually was marked ungrammatical by N. McCawley (1972b:264), was accepted by my consultants, who explained that the sentence means that Tanaka was somehow prodded or urged to buy the car by Sato. It does not have the semantic neutrality that the active counterpart would have. Numbers 9, 10 and 11 were not felt to have a necessarily negative impact on the subject, but they do imply that being told the secret, the lie, or the good news was an unexpected surprise, which the hearer did not expect or had no control

over. The sentences could not be used in a situation where the hearer could expect to be told a lie, or receive good news, etc. Number 12 does not imply anything unexpected, but is felt to emphasize the school's responsibility for the teaching of the manners over the speaker's initiative. This will be discussed in more detail below. What all of these examples have in common is that, in the first place, they all have indirect objects as affected subjects rather than adjuncts or possessors, and in the second place, they not only lack the semantic neutrality of their active counterparts, they actually represent an event that is at least partially different from that of the active versions. The meaning differences between affective passives on the one hand and actives and non-affective passives on the other, will be discussed below.

While nearly all passives with adjuncts or possessors as subject are affective, not all passives with indirect objects as subject are affective, however. For example:

13. Kinoo watasi wa Taro ni zuga o osie-rare-ta.
 Yesterday I TOP Taro IO painting DO teach-(R)ARE
 -pst
 'Yesterday I was taught painting by Taro.'
14. Mary wa John ni jodan o yuw-are-ta.
 Mary TOP John IO joke DO tell-(R)ARE-past
 'Mary was told a joke by John.'
15. Boku wa sensei ni kodomo o home-rare-ta
 I TOP teacher IO child DO praise-(R)ARE-
 past
 'My child was praised by the teacher.'

These sentences were not judged to be affective by my consultants, even though they are very similar to sentences above which were felt to be affective. Notice also that 15 has a possessor as affected subject rather than an indirect object. Clearly this is a hazy area, with judgments being influenced by situational context, lexical content, etc. We cannot say that indirect objects are or are not the cut-off point for affective passive subjects.

One further set of examples:

16. Kodomo wa oya ni Nihon ni nokos-are-ta.
 (Howard and Niekawa-Howard 76:210)
 Child TOP parent IO Japan LOC leave-(R)ARE-
 pst
 'The child was left in Japan by its parent.'
17. Ozawa san wa Suzuki san ni nizikan mo mat-as-are-
 ta. (ibid.)
 Ozawa HON TOP Suzuki HON IO 2 hours wait-caus-
 (R)ARE-past
 'Ozawa was made to wait by Suzuki for as long as
 two hours.'
18. a. Haha wa John kara Mary eno bara o azukatta.
 Mother TOP John from Mary BEN rose DO get/be
 entrusted with
 b. Haha wa John kara Mary eno bara o azuke-rare-ta.
 Mother TOP John from Mary BEN rose DO get/be
 entr. with-(R)ARE-past
 'The mother got/got-passive a rose from John
 for Mary.'

The first two examples are from Howard and Niekawa-Howard 1976 and were presented as evidence that even direct objects can become the subject of affective passives in Japanese. However, 16 does not actually differ in meaning from its active counterpart, and the apparent affective semantics can be attributed to the nature of the event itself; in other words, it is reasonable to expect that a child being left by its parents to go to another country is an adversative situation. The example is thus inconclusive. Number 17 was described by Howard and Niyekawa-Howard as differing in meaning from the active sentence *Ozawa wa Suzuki o nijikan matta* ('Ozawa waited for Suzuki as long as two hours') in the sense that Ozawa was forced to wait by Suzuki in the passive version, but 17 is actually the passive version of the causative Japanese sentence *Suzuki wa Ozawa o ni-jikan mataseta* ('Suzuki made Ozawa wait for two hours'), and clearly the two versions--active causative and passive causative--do not differ in content. Thus there is still scant evidence for patients being subjects of affective passives in Japanese. The final pair of examples is very interesting, since it demonstrates that a verb can in certain cases be morphologically passivized in Japanese without affecting case marking or grammatical role structure in any way. Here the subject of the active version shows up as the affected subject of the passive version. Note that the main verb, *azukeru* ('receive' or 'be entrusted with'), is not an

accusative-type verb; it takes a recipient rather than agent as subject. The semantic difference between the active version and the passive version is as follows: 18a, the active version, means that it was the mother's idea to take the rose, while 18b means that it was John's idea and that he requested this favor of the mother. So while it would appear that a surface subject is being made the subject of an affective passive, if we look at the semantic roles of these participants, we see that it is a recipient as subject and not an agent.

To sum up the above observations on the characteristics of the affective passive, we present the following scale:

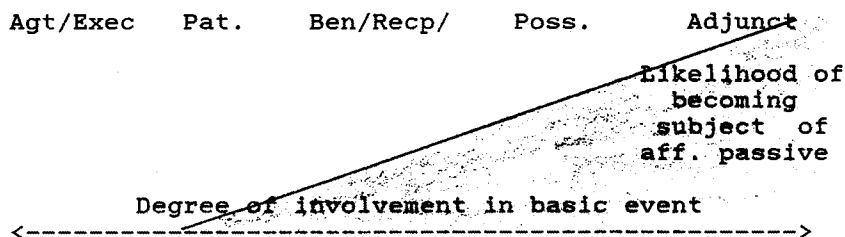


Diagram 1

The diagram shows that the likelihood of a participant's becoming the subject of an affective passive decreases the more to the left we go on the scale of involvement, dropping down to a small degree of likelihood between the benefactive/recipient and patient positions. Notice that the diagram indicates an indeterminate area for indirect objects, which is reflected in the data by the fact that passives with indirect objects are sometimes affective, sometimes not and sometimes vaguely so; recall 8-15. The diagram also reflects the observation that possessors and adjuncts as passivized subject nearly always involve affective semantics, but possessors less so than adjuncts. So we see that not only must the subject be high on the animacy hierarchy as Klaiman (1987) points out, it will also occupy a certain position on a scale of participant involvement ('involvement' in the sense of Payne 1972). It would appear that when a more remote participant becomes subject of a passive, then it automatically "ups" the transitivity of the proposition, as it draws the participant into a more involved status; if so, this would explain why direct objects rarely function as subjects of affective passives: they are already closely enough involved in the event.

2.2 Functional Aspects

Now that we have presented some of the general structural and semantic features of affective passives, we will address the functional aspects, first presenting a more detailed analysis of the meanings of the above sentences.

3. Taro ga haha ni yorokob-are-ta. (*ibid.*)

Taro TOP mother IO be-happy-(R)ARE-past

'Taro had his mother be happy on him.'

6. Mary wa oto ni kanasim-are-ta.

Mary TOP husband IO be-sad-(R)ARE-past

'Mary was felt sad about by her husband.'

Part of the meaning of 3 is that not only was Taro "been happy about" by his mother, but that he did something to bring that state of affairs about, whether intentionally or unintentionally. Thus it could mean that he got an A on a test, that he found a golden egg, that he was handsome and popular, etc. Number 6 also implies, although not as strongly, that Mary did something or at least was in a situation such that she made her husband sad, whether deliberately or not. So we see from these two examples that the subject of the affective passive can influence the occurrence of the event intentionally or unintentionally. This runs counter to Alfonso's (1971) claim that the single most salient characteristic of affective passives is that the subject is invariably a helpless and unwitting victim of circumstance. Although this is frequently true of affective passives, it is not a defining characteristic.

Next, 8, 12, and 18:

8. Tanaka san wa Sato san ni kuruma o ur-are-ta.

(N. McCawley 1972b)

Tanaka HON TOP Sato HON IO car DO sell-(R)ARE-pst

'Mr. Tanaka was sold the car by Mr. Sato.'

12. Watasi wa gakkoo de manaa o osie-rare-ta.

(Kuno 1973)

I TOP school LOC manners DO teach-(R)ARE-

pst

'I was taught manners in school.'

18. a. Haha wa John kara Mary eno bara o azukatta.

Mother TOP John from Mary BEN rose DO get/be
entrusted with

- b. Haha wa John kara Mary eno bara o azuke-rare-ta.
 Mother TOP John from Mary BEN rose DO get/be
 entr. with-(R)ARE-past

'The mother got/got-passive a rose from John
 for Mary.'

As mentioned earlier, 8 means that Mr. Sato has somehow prodded or persuaded Tanaka to buy the car. This implication is absent in the active version of the sentence. Number 12 as well emphasizes the school's active role in the teaching of the manners as opposed to simply stating the fact that the speaker learned manners and it happened to be in school where he or she did it. In 18 we see that the use of passive verbal morphology alone endows the agent (John) with greater potency. The affective component of each of these sentences emphasizes the greater potency of the agent over the patient. Although Shibatani (1985; 1988) has claimed that agent demotion is the essential characteristic of all passives, and while this may be true at least structurally for the affective passive (agents being marked by indirect and oblique case markers respectively in 8 and 12), it does not seem to be strictly true semantically. Also notice that in 18, passivization does not involve demotion, promotion, or topicalization of any kind. In these examples, the agent, whether demoted syntactically or not, does not become less involved semantically.

Now, 9 through 11:

9. Taroo wa Mary ni himitu o uciake-rare-ta.
 Taroo TOP Mary IO secret DO tell-(R)ARE-past
 'Taroo was told (confided) the secret by Mary.'
10. Taroo wa Mary ni uso o tuk-are-ta.
 Taroo TOP Mary IO lie DO tell-(R)ARE-past
 'Taroo was lied to by Mary.'
11. Taroo wa Mary ni ii sirase kik-as-are-ta.
 Taroo TOP Mary IO good news listen-caus-(R)ARE-
 past
 'Taroo was told ["made to listen to"] the good
 news by Mary.'

We stated earlier that 9 through 11 describe situations in which the subject has no control over the action undergone, and that while this is not obligatorily the case in affective passives, it is often characteristic of them, as these examples show. Notice that being told good news is treated the same way semantically and structurally as being told a lie

or a secret; thus there is no evidence for distinguishing different types of beneficial or adversative affective passives, as Wierzbicka (1979) suggests. The "affective meaning" here is simply that the subject had no control over what happened to him or her.

Reviewing the above observations, we can distinguish three functions of the affective passive: two are semantic, namely, the expression of greater affectedness of object (9-11) and the expression of greater potency of agent (8, 12, 18). The third function has both syntactic and semantic consequences, namely the introduction of a patient argument to an intransitive verb, thereby creating a transitive verb (1-7). Rather than distinguishing three types of affective passives corresponding to these three functions (cf. Wierzbicka 1979), we can go a step further and generalize: the essential function of the affective passive in Japanese is to express a heightened semantic transitivity over that of a syntactically active representation of an event. This is not meant to imply that other, more typical passive functions, such as pragmatic focussing, expression of empathy, etc., cannot also be involved, but an increase of transitivity is the basic function of the construction.

III. The Affective Passive in Perspective: Voice Systems

Since it exhibits the same case marking and verbal morphology as the non-affective passive, and since a non-agent participant is promoted to subject, the actual 'passive' status of the Japanese affective passive has not been questioned. In order to evaluate the role of this construction in the voice system of Japanese, we must first consider what passives are, and how voice systems are structured. The passive has been defined by Perlmutter and Postal (1977;1983) as a device for promoting direct objects into subject position; it has been defined by Shibatani (1985;1988) as a device for demoting agents out of subject position; and by Givon (1981;1988) as a construction having a range of functions, from topicalization to agent suppression to detransitivization. Most of these approaches treat the passive as a relatively isolated phenomenon, without relating it to voice constructions other than the active. The passive has been defined in more traditional works treating voice as a system (Barber 1975; Lyons 1968) as a construction in which the

grammatical subject realizes the affected participant and is acted on by an outside participant (i.e. the agent). Many researchers also associate the passive with reduced valence; the passive is often said to have one less argument than the active (at least syntactically). If we compare all of these definitions of the passive to the defining characteristics of the Japanese affective passive, we find that they are all appropriate (except for valence reduction) and perhaps even necessary conditions, but none of them, taken either separately or together, is sufficient to define the affective passive on its own terms. Although the affective passive shares certain features in common with the non-affective or pure passive--namely verbal morphology, case marking and promotion of non-actor to subject--it clearly has some crucial functional differences from the non-affective passive. There does not seem to be a way to understand this construction in treatments of passive or even in more comprehensive treatments of voice as they have been presented so far.

Heightened semantic transitivity and an increase of syntactic valency are more characteristic of another Japanese voice construction, the causative. In treatments of voice based on the grammatical and/or semantic relationship of the subject to the verb, the Japanese causative can be understood as a voice alternant, since it has morphological marking in the verb (the infix -(s)ase) which shows that the grammatical subject is to be understood as the agent acting on an executor.

19. John ga Mary ni hon o yom-sase-ta.
 John TOP Mary IO book DO read-CAUS-pst
 'John made/let Mary read books.'

Here, John is the agent and is marked as topic/subject, while Mary, the executor of reading, is marked by ni, the indirect object marker; this interpretation of the roles is coded in the -(s)ase infix on the verb. John is an "extra" participant to the event of reading, and could not be an argument to the non-causative non-passive sentence Mary wa hon o yonda ('Mary read the book').

The affective passive thus shares some very important features in common with the causative (as well as the pure passive). Structurally, they both can introduce "extra" NPs (increased valence). Semantically, they both signal higher transitivity. Comparing the affective passive with both the causative and the pure passive, a kind of complementarity of features

emerges, as shown in Diagram 2.

	Pure Passive	Aff. Passive	Causative
Morphology			
-(r)are	x	x	
Case Marking	x	x	
Subject =			
Affected	x	x	
Increased			
Valence		x	x
Increased			
Transitivity		x	x

Diagram 2

The affective passive is shown here to have important similarities to two very divergent voice constructions. Analyzing it as simply an odd version of the passive would obscure its unique functional value in the Japanese voice system. Previous approaches to passivization and voice have not provided for such subtleties. Instead of recognizing only a simple binary active-passive voice system, or one with perhaps three values (active-middle-passive), the contrasting constructions of each language should be allowed to determine the structure and range of the voice system which they comprise. An approach of this sort will lead naturally to a more comprehensive understanding of voice and of the functions of voice alternations.

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PARTICIPANT REFERENCE AND ARGUMENT STRUCTURE IN SIERRA POPOLUCA

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1. Introduction.

Although Sierra Popoluca¹ uses nouns and free pronouns to identify participants in discourse, once a participant is introduced, they are used sparingly because participants are obligatorily required by or implied in the verb. This paper examines this matter and discusses the various ways in which participants are both included and identified in the verb.²

2. Simple verb roots.

Simple verb roots may require from one to three participants: *nik*³ 'to go' requires⁴ one participant, or one argument, *anikpa* 'I go'; *toy* 'to love' requires two participants, or two arguments, *antoypa* 'I love him/her'; *či* 'to give' requires three participants, or three arguments,⁵ *añči'iba* 'I give it to him/her'. A few roots may allow either one or two participants depending upon their usage: *pet* 'to sweep' may be either *apetpa* 'I sweep' or *ampetpa* 'I sweep it'.

Generally speaking, verb roots are single syllable morphemes of the phonemic shape CVC (were either C may be zero, and the final C may be *ps* or *ks*). The total number of verb roots of this type discovered so far is about 325. There are a few two syllable roots usually of the shape CVCVC. Again the initial and final C may be zero, and the final C *ps* or *ks*. Only about a dozen roots of this shape have been observed.

When a one argument verb root is selected and is inflected directly, the participant is the agent. Such verbs are referred to as intransitive. When a two argument verb root is selected one participant is agent and one patient. When a three argument verb root is selected, one participant is agent, one is patient, and one recipient.

1 SP is spoken in the state of Veracruz, Mexico by perhaps 30,000 speakers. It is a member of the Zoque-Mixe language family.

2 Doris Bartholomew read a previous draft of this paper and I have profited very much from her comments.

3 In previous articles on Sierra Popoluca, I have used A for the sixth vowel. Phonetically it represents a high central vowel and current practice seems to be to use *i*. I shall follow this practice from now on.

4 By the term 'requires', I mean that the participant(s) involved may be identified overtly in the same clause, but need not be. But they will be identified in the larger context.

5 I shall use the terms 'one argument verb', 'two argument verb', etc. instead of 'a verb requiring one participant' and similar locutions.

3. Verb bases.

The verb base may consist of the verb root alone; the verb root plus derivational affixes *ku-* and *aŋ* (see below), compounds of verb root plus verb root (for example, *poy* 'to run' + *heh* 'to rest' > *tapoyhehpa* 'you and I will rest briefly'); noun plus verb root (for example, *ka:ma* 'cornfield' + *tiŋ* 'to chop' > *ka:mtiŋ* 'to chop trees for a cornfield'); or any of the affixes discussed in 5.2. that add or defocus⁶ participants (see below).

Compounds of noun plus verb root can be largely classed as object incorporation and serve to defocus specificity. For example, if we compare

pe:to iŋ'ip̄pa ika:ma 'Peter is cutting his cornfield'

with

pe:to ka:mtiŋpa 'Peter is cutting a cornfield'

the former is very specific, while the latter is much more general. Object incorporation also defocuses the patient, and a two argument verb becomes a one argument verb.

4. Affixes that accompany verb bases.

We now turn to a consideration of affixes that may accompany verb roots. These affixes fall into three groups: (1) prefixes *ku-* and *aŋ-* are derivational affixes (when either is attached to a verb root the resulting meaning may be quite unexpected—for example, with the root *nu'k* 'to arrive' > *kunu'k* 'to arrive at', > *aŋnu'k* 'to close as a cut or wound that heals'); (2) person marking prefixes, and (3) a group of affixes some of which add, and some of which defocus participants. We first consider the person marking prefixes.

4.1. Person marking prefixes.

There are two sets of person markers that accompany verbs to mark one or two of these participants. In other words, of the various participants that are implied in the verb, the person marking affixes relate to (or mark) one participant in one argument verbs, two participants in two argument verbs or three argument verbs. Other participants in verbs of three or more arguments may be marked in the clause or left unmarked.

One set we label Set A (for Absolute) and the other Set E (for Ergative). Set A occurs with one argument verbs in main clauses, Set E occurs with one argument verbs in certain subordinate clauses. Both sets occur with two and three argument verbs. Either set may occur with nouns.

The two prefix sets are as follows:

⁶ In a prior draft of this paper I used the term 'delete'. However, as a result of the discussion when this paper was presented at the Forum, the term 'defocus' now seems preferable.

Set A		Set E	
<i>a-</i>	1st	<i>an-</i>	1st
<i>ta-</i>	1st & 2nd	<i>tan-</i>	1st & 2nd ⁷
<i>mi-</i>	2nd	<i>iñ-</i>	2nd
<i>Ø-</i>	3rd	<i>i-</i>	3rd

When Set A occurs with a one argument verb it marks (or refers to) the agent.

<i>anikpa</i>	'I'm going'
<i>tawikpa</i>	'you and I are eating'
<i>mipoypa</i>	'you are running'
<i>ho:ypa</i>	'he/she is taking a walk'

Set E may also occur with one argument verbs in subordinate clauses marking agent.⁸ This represents a kind of inversion found in other Zoque-Mixe languages.⁹

<i>anikpa</i>	'I go'	<i>hesik mu annik..</i>	'Then as I went'.. then as 1st-go-past..
<i>miwi'kpa</i>	'you eat'	<i>miwi'a:p iñwi'k</i> ¹⁰	'You can eat.'
<i>wi'kpa</i>	'he eats'	<i>mu iwi'k..</i>	'As he ate.'

With a two argument verb both person marking sets are used. Set E marks agent and Set A marks patient.

<i>Ø- + an- + nu'us</i>	'hug' > <i>annu'uspa</i>	'I hug him'
<i>mi- + an- + nu'us</i>	> <i>mannu'uspa</i> ¹¹	'I hug you'
<i>a- + in- + nu'us</i>	> <i>annu'uspa</i>	'you hug me'
<i>Ø- + i- + nu'us</i>	> <i>iñu'uspa</i>	'he hugs him'
<i>a- + i- + nu'us</i>	> <i>anu'uspa</i>	'he/she hugs me'
<i>mi- + i- + nu'us</i>	> <i>miñu'uspa</i>	'he/she hugs you'

With a three argument verb both person marking sets are used. Set E marks agent and Set A marks recipient. The patient is left unmarked in the verb, but may, of course, be marked in the clause.

<i>mi- + an- + ċi + -pa</i>	> <i>mañċi'iba</i>	'I give it to you'
<i>mi- + i- + ċi + -pa</i>	<i>yip kawah</i>	'He will give you this horse'

⁷ I consider the 1st dual forms ('you and I') to be one participant (not two). All of these forms are considered singular and may be pluralized. When the first person and first person dual forms are pluralized, it results in a division between exclusive and inclusive first person plural. Huave, an unrelated language spoken about 100 miles south of the SP area, has a similar situation. Those working in Huave use the terms 'minimum' and 'multiple' instead of using singular and plural as I have done (Stairs and Stairs, 1981).

⁸ Some colleagues I have discussed this matter with do not agree that the term 'ergative' should be used for this set because of this fact.

⁹ See Schoenhals 1979.

¹⁰ This sentence is treated as two clauses, *miwi'a:p* 'you are able' being the main clause and *iñwi'k* 'you eat' being the dependent clause.

¹¹ When both sets are used, the following morphophonemic rules apply: (1) *i + a > a*, (2) *a + i > a*, (3) *i + i > i*. These rules apply only to these sets used together and not to the language generally.

Both sets occur with nouns. Set A marks subject of a stative construction, while Set E marks possessor. Both sets may occur with the same noun in a construction where both stative and possessive occur, e.g., 'you are my son'.

Set A	Set E
<i>ayo:mo</i> 'I am a woman'	<i>añyo:mo</i> 'my wife'
<i>kawah</i> 'horse, it is a horse'	<i>ikawah</i> 'his horse'

4.2. Affixes that defocus or add participants.

Participants may be defocused or added by affix morphemes being attached to the root or to verb bases described above. We now consider this group of morphemes and the effect they have on the verb.

4.2.1. Affixes that defocus participants. There are three affixes that defocus participants.

(1) *-ni:m* may occur with verb bases that have one participant as agent. The result is that no participant is present or may be expressed in the same clause. Therefore, no person marking affix may occur with verb bases containing *-ni:m*.

<i>mičigpa</i>	'you are bathing'
<i>čigpa</i>	'he/she is bathing'
<i>čignim:mpa</i>	'there is bathing' or 'someone is bathing'
<i>tawanpa</i>	'you and I are singing'
<i>wanpa</i>	'he/she is singing'
<i>wanni:mpa</i>	'there is singing' or 'someone is singing'

(2) *-ta:* may occur with a two argument verb. Its effect is to defocus the agent. Set A person markers occur with the verb marking patient.¹²

$\emptyset + i- + ku't\ ma:yi > iku't\ ma:yi$	'he/she ate meat'
$\emptyset + ku't + -ta: ma:yi > ku'tta: ma:yi$	'meat was eaten'
$mi- + an- + toy + -pa > mantoypa$	'I love you'
$a- + toy + -ta: + -pa > atoy'a:p$	'I am loved'

When a three argument verb, e.g. 'give', occurs with *-ta:* the agent is defocused, both patient and recipient are required and may be marked in the clause. Set A marks the recipient.

$\emptyset + i- + či\ pe:to\ tumiñ > iči\ pe:to\ tumiñ$	'he gave Peter money'
$\emptyset + či + -ta: pe:to\ tumiñ > či'it'a: pe:to\ tumiñ$	'Peter was given money'

(3) *-o'y* may occur with a two argument verb and its effect is to defocus the patient or (where the participants are agent and recipient) the recipient. Set A person markers occur marking agent. *-o'y* also seems to emphasize the activity indicated by the verb root.

$\emptyset + an- + tuh + -pa\ mi'a > antuhpa\ mi'a$	'I shoot a deer'
$a- + tuh + -o'y + -pa > atuho'ypa$	'I shoot' or 'I am one who shoots a lot'
$\emptyset + in- + ku't + -pa > iŋku'tpa$	'you eat it'
$mi- + ku't + -o'y + -pa > miku'do'ypa$	'you eat different things'

¹² In certain subordinate situations, Set E occurs with verbs which contain *-ta:* marking patient: *miwi'a:p iŋko'tsta:* 'you can be hit'.

-o'y may also occur with a three argument verb, e.g. *či* 'give', in which case the recipient is defocused. Set A person markers occur marking agent. The patient is not marked in the verb but may be marked in the clause.

Ø + *i-* + *či* *pe:to malia tumiñ* 'Peter gave Mary money'

Ø + *či'o'y* *pe:to tumiñ* 'Peter gave the money'

4.2.2. Affixes that add participants. Four such affixes are part of the verbal affix system. Two we label causatives, one benefactive and one instrumental. The causatives seem to be able to occur with any root, the other two only where it is semantically appropriate.

(1) The causatives. There are two causative morphemes *ak-* and *na-*. Both of these prefixes add another participant (causer) to those already required by the verb base. The prefix *ak-*¹³ is a direct causative where the causer of the action does not participate in it. While *na-* is an associative causative where the causer does participate in the action as well. Examples are:

ak- + *nik* 'to go' > *iknikpa*¹⁴ 'he sends it'

na- + *nik* 'go' > *ininikpa* 'he takes it'

ak- + *hoks* 'hoe' > *ikhokspa* 'he causes him to hoe it'

na- + *hoks* 'hoe' > *inihokspa* 'he hoes it with him'

ak- + *či* 'give' > *ikči'iba* 'he causes him to give it to him'

When the person marking sets occur with a verb base containing *ak-* Set E marks causer and Set A marks the previous agent now promoted to recipient.

iku'tpa aŋkawah so'k 'my horse eats grass'

anakku'tpa aŋkawah so'k 'I feed my horse grass'

akku'tta: aŋkawah so'k 'my horse was fed grass'

akku'do'ypa so'k 'grass is fed'

5. The benefactive.

The suffix *-a'y* normally occurs with two participant verbs to add a recipient or a benefactive. It is the recipient or benefactive that is marked by Set A, the agent is marked by Set E and the patient is left unmarked in the verb. It is also used when a possessive phrase is the patient, except when the agent and possessor are the same. When such a situation obtains, it is the possessor that is marked by Set A. The direct object is left unmarked within the verb, that is, it implied by the verb stem. Of course, it can also be syntactically present.

Ø- + *i-* + *nanik* + *-a'y* > *ininiga'y* 'he took it for him'

mi- + *an-* + *namīñ* + *-a'y* > *manami'ña'y* 'I brought it for you'

Ø- + *i-* + *nu'm* + *-a'y* > *iñu'ma'y šiwan ikawah* 'he stole John's horse'

¹³ There is an idiomatic formation with *ak-* that does not follow the usual rules for its use. *ak-* plus the verb *tig* 'to chop' does not result in the expected 'to cause to chop' but rather means 'to fall', *aktiŋ* 'he fell', or *aktiŋ aña'yka* 'my bad deed came to light'.

¹⁴ To account for the phonemic forms when *ak-* and *na-* are present and the person marking sets are added additional morphophonemic rules are needed beyond those already stated in footnote 11. They are as follows: (1) When preceded by a person marking morpheme containing /i/, *ak-* > *ik* (that is, the combinations *i-* + *ak-*, *mi-* + *i-* + *ak-* and *iñ-* + *ak* > *ik*, *mik* and *inik* respectively.) (2) The combination *a-* + *ak* > *ak*. (3) When preceded by a person marker containing /i/, *na* > *ni* (that is, *i* + *na* > *ini* or *iñ* + *na* > *ini*.) (4) Geminate clusters become single phonemes.

Ø- + i- + *akchiŋ* > *ikchiŋ ikawah* 'he washed his (own) horse'

The suffix *-a'y* may also occur with a few verbs that require only one participant. When it so occurs, it adds a recipient. One such verb that occurs frequently in both text and conversation is the verb *nim* 'to say'. *nim* is a one participant verb. When it occurs without *a'y* it is usually accompanied by quoted material. The quoted material is not treated as a patient or object.

nimpa šiwan, 'ič anikpa.' 'John says, "I am going."'
ani'ma'y šiwan, 'odoy niki.' 'John said to me, "Don't go."'

5.1. The instrumental.

The instrumental suffix *-ka* occurs with some verb stems where the resulting form is semantically appropriate, but unlike the other affixes that add participants it does not occur with as many verb bases. When it occurs with a one participant verb, it normally adds a patient. When it occurs with a two participant verb, it normally adds an instrument.

ki'm 'to go up' > *iki'mka ikawah* 'he mounted his horse'
tiŋ 'to chop' > *iŋka he'm kuy ačahmi* 'he chopped the wood with an ax'

6. Conclusion.

We have tried to show how one part of the verbal system in SP works, including the fact that for descriptive purposes role terminology seems more adequate than surface structure terminology of subject, object and the like.

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CLAUSE RELATIONS WITHIN THE ANAPHORIC NOMINAL GROUP

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The Need for a Powerful Discourse Model

Many attempts have been made to explain the overall structure and organization of texts in general terms, and several serious attempts have been made to identify and apply for analytical purposes the relations which exist between statements. The work of Beekman and Callow (1974), Longacre (1972, 1983), Winter (1974, 1977, 1982), and Mann and Thompson (1986, 1987, 1989) is most noticeable in achieving the more specific second aim. While their approaches in seeking to explain the semantic connection between clauses and sentences is of considerable use, we need also to explain the semantic connections within as well as between the clauses of a text. Some work is already available introducing the possibilities of achieving this third aim (Jordan 1988a,b), and this present paper builds on this work by demonstrating semantic connections within the anaphoric nominal group - a fourth level of difficulty. The overall goal is to achieve a model of textual description which integrates the morpho-syntactic, semantic and communication strata of language.

The explanation of the semantic connections between the clauses and sentences themselves and also between the grammatical elements of the clause is difficult enough; but the task which faces us is even more demanding, and we first need to determine why such an approach is necessary. This becomes apparent when we examine the semantics of nominals such as:

- (1) Flight 232...carried 11 crew members and 282 passengers...

The Seattle-based cockpit crew survived and were treated for injuries at a hospital, Mr. Nagin said. (The Whig Standard, 20 Jul, 1989, P1)

Clearly there are semantic connections between the two sentences and other parts of the text - and also between the theme of the second sentence and the intransitive and passive clauses. But there is also part-

itive and associative semantic connection between the theme and the previous information, and connection within the theme itself.

The connections within the theme can be determined by applying van Dijk's (1973) approach of writing out the separate sentences which could yield the same information. Taking Flight 232 as the trigger for the meaning of the complex nominal, we can (ignoring the crew partitive) recognize several potential statements leading to the meaning expressed in the nominal:

"Flight 232 has a cockpit."

"The cockpit has a crew."

"This crew is based in Seattle."

The first two statements are known by readers, and the third is new; but, whether known or new, the information provided by each statement is contained within the grammar of the nominal group, and this needs to be accounted for in any comprehensive theory of discourse structure and meaning.

That is, we cannot simply identify the relations between statements, or even within the major elements of the statements; we also have to account for the rank-shifted relations within components of the clause. Many of these complex nominals occur as theme of the new clause, often with known information on which the following rheme is based. But again that is not of vital consideration for us here; the meanings must be identified whether they occur at clause level or lower, and whether they dominate the information structure of the sentence in thematic position, or are embedded within the clause or sentence.

We therefore need a powerful discourse model which can account for all the semantic connections within a text, irrespective of the surface form used to convey those relations. This paper explains how established principles of clausal connection can be applied within the anaphoric nominal group, thus expanding recent extensions of clause-relational theory (Jordan, 1988a, b) and creating a more powerful means of explaining textual connections.

Associations

The theory of lexical connection through nominals associated with the antecedent or originating nominal is now well established (e.g. Jordan, 1984) based on

work by Christophersen (1939) and Hawkins (1978). Basically, almost any connection can be made through association with the "trigger," and we can recognize post-triggered, pre-triggered and untriggered associates. More importantly here, we can view associations as statements (often known statements) rank-shifted into nominal form, and thus containing a clause relation within the nominal group:

- (2) As a taxpayer I am appalled by City Council's decision to give the mother of an 11-year-old child \$1,300 to use to enter the child in the "Miss Hemisphere" 1989 contest in Florida...

How dare you use my tax money to fund what I am sure others consider a strictly personal matter.
(The Whig Standard, 20 Jul 89, P5)

The writer introduces herself as a taxpayer, and so readers already know she pays tax money. The nominal my tax money is associated with the writer/topic, but the association is not made overt by "I pay tax money." as that is already known. Here is a similar example:

- (3) Chantel Daigle's lawyer was at the Supreme Court of Canada today in hopes of lifting an injunction barring her from having an abortion.

Ms. Daigle, who wants to appeal a Quebec ruling that places the rights of a fetus above those of a woman, is 21 weeks pregnant.

Her former boyfriend, Guy Tremblay, was granted the injunction by the Quebec Supreme Court on July 17. (The Whig Standard, 20 Jul 89, P1)

Clearly readers can readily deduce from the two previous paragraphs that Ms. Daigle has a former boyfriend, and the statement of this known information would be inappropriate in clausal form - hence the pre-triggered associated nominal containing the information in the more subtle nominal form.

Even when the information is not known to readers, the associated nominal could still be an appropriate form of connection, especially when the connection is apparent in the text:

- (4) Local Developer A. Britton Smith says he's not about to compromise his plans to build two 13-storey condominium towers and 10 townhouses at the Richardson Dock property at Elevator Bay.

The President of Homestead Land Holdings Ltd. told The Whig-Standard yesterday that despite this week's decision by city council rejecting his plans, he believes a new provincial housing policy has paved the way for him to build even more units on the waterfront site. (The Whig Standard, 20 Jul 89, P1)

The semantic appositional connection between the themes of these two sentences is not overtly stated, but is quite clear in the context. The relation between the two themes could have been stated by a clause such as "The developer is President of Homestead Land Holdings." or as syntactic apposition or relative clause, and we must be able to identify that relation even though it is not overtly stated.

The true appositional connection in Example 3 means that the two themes are interchangeable. With partial appositional connection, the principle is similar:

- (5) An 18-year old man suffered major injuries last night and wrecked a \$20,000 Oldsmobile after falling asleep at the wheel of his car, the Brockville detachment of the Ontario Provincial Police reports.

Joseph R. Doherty of Chatham, Ont., was pulling off Highway 401 at the long beach exit ramp ... (The Whig Standard, 20 Jul 89, P2)

The definition of the man is not complete in the initial nominal but is contained in the whole of the first clause. This clause is re-entered into the text by the thematic nominal in the next sentence. More importantly here, that nominal contains further information about the man. That is, it accomplishes more than referential connection: it also includes a relation of Naming, which could have been made overt by the statement "He is Joseph R. Doherty of Chatham, Ont." or by apposition "The man, Joseph R. Doherty..."

What we need to note from these examples is that anaphoric nominal groups can contain information about previous topics, which could be indicated clausally.

Apposition, Anaphoric Clauses and Complex Nominals

Appositions in context often provide the connecting link between the new nominal and the preceding text. In the following example discussing an abortion case, two newly-introduced people are related to the topic of discussion through anaphoric apposition:

- (6) Pro-choice activists reeled while anti-abortionists exulted yesterday at the stunning moral turnaround of Barbara Dodd...

Jim Hughes, Director of the Campaign Life Coalition, said yesterday that he was still pinching himself to ensure he had not dreamt the whole scenario...

Judy Rebeck, a pro-choice activist who dealt closely with Ms. Dodd, was emphatic there was no pressure on her. (The Whig Standard, 20 Jul 89, P7)

The first verbless clause is true apposition, while the second is partial apposition, as the combination of verbless clause and defining relative clause do not completely define Judy Rebeck in this context. Both are anaphoric in the larger context, and both provide new information about an earlier part of the text.

Clause relationally, non-defining clauses provide further information about a topic, whereas defining clauses only assist in definition of the nominal. Here is an example of both uses:

- (7) Kingston Native Peter Foley, a former advertising salesman with CKLC Radio and former president of the Kingston's arthritis society, was killed in yesterday's fiery crash of a United DC-10 in Sioux City Iowa...

Ron Kelly, who taught Mr Foley in college and became a close friend, said Mr. Foley spoke often at alumni gatherings...

Mr. Kelly said he received a number of phone calls today from friends and former classmates of Mr. Foley who remembered how he helped them get started on their careers. (The Whig Standard, 20 Jul 89, P2)

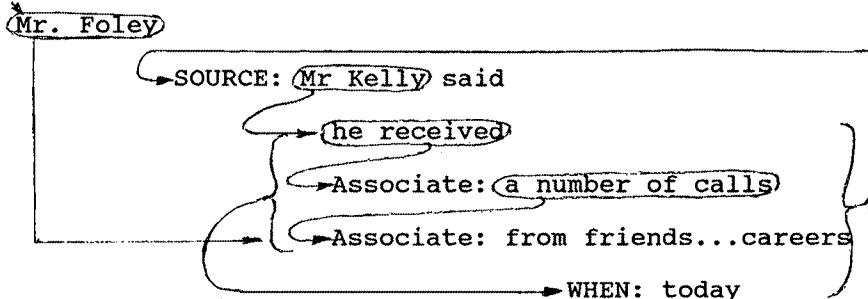
The non-defining clause in the second sentence has two connections with the topic Peter Foley: the subject/object relation, and the untriggered associate a close friend (of Mr. Foley). The non-thematic complex nominal in the final sentence is a two stage associate of the topic. The first stage is from friends ... their careers, containing the split defining relative clause; this further defines the second stage a number of phone calls. The adverbial today provides further information about the clause as a whole and not just the nominal.

Apart from the lexical complications created by he, them, and the pre-triggered associate their careers (see Jordan 1983 for related discussion), the complex nominal contains two rank-shifted clauses stating that there are those who remembered that, and they made a number of phone calls. The full clausal forms for the nominal are:

"There are friends and former classmates of Mr. Foley who remember how he helped them get started on their careers."

"They made a number of phone calls."

Then we have the source and adverbial clauses of the matrix clause. The connections within this sentence as well as the anaphora from earlier in the text can be illustrated as follows:



Relations Within Nominals

Thus we cannot limit our analysis of text to clausal boundaries, or even to the boundaries of the major grammatical elements of the clause. Specifically, we must be able to include in the analysis the common complications created by rank-shifted information within nominals. Clearly, we would recognize

the appositive appeal court judge as containing information we should identify as a clausal feature of a text providing detail. Equally clearly, we must also account for that information when it occurs within the grammar of the nominal group:

- (8) With time running out, Chantel Daigle hopes to learn today from the Quebec Court of Appeal whether she can have an abortion against the wishes of her former boyfriend.

In a five-minute appearance in a packed courtroom, appeal court Judge Roger Chouinard granted Ms. Daigle permission to appeal Monday's decision by a Quebec Superior Court judge who said the fetus she is carrying has a right to life and therefore must not be aborted. (The Whig Standard, 20 Jul 89, P2)

One of the functions of attributive this is to allow new information to be included within the anaphoric nominal:

- (9) Due to the Supreme Court's ruling on June 22, 1989 in favor of a 1986 Canadian Radio-television and Telecommunications Commission's decision, Bell Canada will credit its customers a total of \$206 million plus interest. This one-time credit is equivalent to approximately two months of basic local telephone service to individual, eligible customers. (The Whig Standard, 20 Jul 1989, P7)

The information that the credit is one-time is contained within the nominal group, but must still be accounted for semantically as if it were a clausal statement. Here is a similar example:

- (10) Sarah spoke to victims of amyotrophic lateral sclerosis - a degenerative neuro-muscular affliction better known as Lou Gehrig's disease...

"I feel that it is so sad that the only reason that a lot of people know about this deadly disease is due to the deaths of well-known personalities..."

"I feel so strongly that we must continue to do all we can to once and for all generate sufficient scientific research to eliminate this debilitating and fatal disease." (The Whig Standard, 20 Jul 1989, P7)

While degenerative may imply debilitating, that is not clearly stated until the final nominal. In addition, the fact that the disease is a fatal one is not stated when the disease is introduced, but is added later within the first anaphoric nominal.

We also need to be alert to the possibility that new information about the trigger can occur within the semantics of the head noun itself. In the last two examples, both credit and disease are repetitions from the text and thus contain no new information, but lexical choice can provide classifying, identifying or evaluative information:

- (11) Beauty contests are an insult to women and men, but to extend this degrading spectacle to include children is too much. (The Whig Standard, 20 Jul, 1989, P5)

Use of spectacle rather than the more neutral event here is intended to be derogatory, and presents the writer's evaluation. If these degrading contests had been used, the head noun would have contained no relation with the topic, leaving that function solely to the adjective. The lexical choice here contains the connection within its meaning; the inclusion of degrading, of course, provides further evaluation.

Clausally-Related Nominals

The preceding discussion deals with anaphoric nominals which have other nominals as antecedents, and which therefore provide further information about those antecedents both within the new nominal and in the clause of which the new nominal forms a part. The principles are much the same when the antecedent for the anaphoric nominal is a clause:

- (12) The company is to test an in-situ combustion process that burns part of the oil in a reservoir to heat the remaining oil. The reduced viscosity enables the combustion gases to drive previously unrecoverable oil to a producing well. (Chartered Mechanical Engineer, Dec 78, P25)

The thematic nominal includes within it a cause-effect relation with the previous to-infinitive Purpose clause as the referent-input to the relation, the question being answered by the nominal being "What does the heating cause to happen?" and the answer being "It reduces the viscosity." This relation is rank-shifted

into the nominal group presented rather than being given in clausal form. The clausal connections can be seen as:

The company is to test an in-situ combustion process

→ that burns part of the oil in a reservoir

→ PURPOSE: (to heat the remaining oil)

→ EFFECT: (The reduced viscosity)

→ EFFECT: enables the combustion gases...

The relational connections would have been the same had the surface form been "The heating of the remaining oil reduces the viscosity, which..." and we therefore need to express this relation whether it occurs in clausal or nominal form.

The cause-effect anaphoric nominal is perhaps more clearly seen in the following example, because the relation is overtly signaled by the adjectival resulting:

- (13) Titanium is evaporated in a vacuum at 900 F (482 C) and reacted with nitrogen gas. The resulting titanium nitride plasma is ionized and electrically attracted to the substrate surface using multiple plasma guns. (Materials Engineering, May 84, P15)

The whole of the previous two clauses form the antecedent for the anaphoric cause-effect nominal, which could have been expressed clausally as "This produces a titanium nitride plasma, which is..." and again we need to examine and express the semantics within the nominal group in order to achieve a reasonable analysis of the textual relations present.

Conclusions

Many anaphoric nominals in English do more than provide the means of saying something more about a previous topic (the reason for anaphora) by re-entering it into the text; they also say something about the antecedent within the nominal. This can be achieved through any pre- or post-modification of the head noun, or the additional semantics can be added through lex-

ical selection. Often several relations can be present in a complex anaphoric nominal group, and these can be identified by writing out the separate possible clausal equivalents for the information contained within the nominal.

Some anaphoric nominals may not contain any overt signal of anaphora within them, and we can only determine that the nominal is anaphoric by reference to earlier parts of the text, and by understanding the lexical connections involved. Associated nominals - especially untriggered ones in which the antecedent is not overtly stated - must be viewed as special forms of rank-shifted clauses which contain information (often already known) about the antecedent within the semantics of the nominal group. Anaphoric apposition is a clear paraphrase of the anaphoric rank-shifted nominal.

While many anaphoric nominals have nominal antecedents, others have clauses, sentences or larger parts of the text as antecedents, and the principles of connection are seen to be very similar. The writer can provide information about an earlier statement just as well as about an earlier nominal group, and information can be expressed in nominal form as well as clausally.

This analysis and related earlier work (Jordan 1988a,b), however brief and incomplete, shows that in our efforts to explain the intricacies of relational propositions within a text, we must do more than analyze the relations between the clauses and sentences as presented. We must also examine in detail the relations which occur within and between the elements of the clauses - even within the nominal group.

This approach is bringing us closer to textual, semantic, and syntactic unity, in which a holistic view of all elements of language is necessary for a comprehensive understanding of text.

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Description and Narration with a Difference:
the Use of Participles
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Authors of contemporary composition texts have finally acknowledged that writers use descriptive and narrative strategies of development together in a single paragraph as often as they use them apart. Lyons, in Writing Fundamentals, goes so far as to say that they almost always go together (p.197). Some authors separate their descriptive passages from their narrative ones. Others use one strategy to frame, or motivate, the other : a descriptive introduction sets the scene for upcoming action, a narrative event brings to mind descriptive details concerning one of the characters involved. Others, as the following examples illustrate, use somewhat of a 'slice' method: a bit of one, then a bit of another, then back to the first, on to the second and so on. Some authors are deceptive. Passages of their work may appear descriptive at first glance, but analyses reveal something rather different. In the well-known passage from To The Lighthouse where Woolf describes the house (p.119), her description borders on narration. In the climactic episode where Moby Dick 'reaps away' Ahab's leg (p.159), Melville's narration becomes something more. Both authors obscure the distinctions between the two strategies in the same way: by their special use of participles. And some, like Dillard in her short story "Living Like Weasels", use participles, among other descriptive and narrative elements, to go beyond the confines of these traditional developmental modes altogether.

Many experts in composition define description as "essentially spatial. Arranging details in some kind of tour through space...You organize your paragraphs virtually as units of space ...conducting your reader in an orderly progression ... from top to bottom, right to left, east to west ...You will instinctively use a series of spatial signals: 'on the right', 'above', 'next', 'across'. Your concern is to keep your progress orderly, to help your readers see what you are talking about." (Baker p.60) The Oxford Guide to Writing says that "Description presents a verbal portrait of a person, place, or thing. It can be used to enrich other forms of writing or as a dominant strategy for developing a picture of a subject. A successful description does not depend solely on visual effects, however, but attempts to identify the subject's significant features by evoking all the senses. Impressions and observations are arranged in an appropriate pattern designed to capture both detail and wholeness. Specific, vivid details make your readers see what you see, and arranging those details in an appropriate sequence helps your readers understand why your subject is interesting and significant. Description is not merely a catalogue of facts or a

collection of ornaments; like narration, it must make a point"(p.111).

"Narration is described as essentially temporal...you simply take your reader along the natural sequence of what happens ... guiding your reader along with temporal signposts: 'at the same time', 'now', 'then', 'while' ..." (Baker p.62). "Narrative paragraphs present a series of events that begin at a particular time and are organized chronologically" (Hodges p.356). "It focuses on what people say and do, telling us when, where, who, what and why" (Guth p. 25). The Oxford Guide to Writing words it: "An effective narrative has a plot--a meaningful and dramatic sequence of action--which may or may not follow the order in which the events actually occurred and usually focuses on some tension or conflict within the writer, between the writer and others, or between the writer and the environment. It depends on pace to effect its purpose... it requires a point of view, establishing the person (attitude and personality of the narrator) and position of the narrator (his/her closeness to the action in both space and time...)" (p.109).

Although the first definition pertaining to each strategy may not be the best overall, it contains the most specific details: the use of spatial or temporal conjunctions / adverbs/prepositional phrases to direct the reader spatially or temporally. Semological and syntactic specifications are otherwise lacking. Yet each strategy does have particular semological and syntactic implications in typical manifestations. As examples one and two in the Appendix reveal, description usually means a nominal style; narration, verbal (cf. Malcolm 1986). As these characterizations would suggest, the noun and its modifiers are primary in typical description; the verb and its modifiers in narration. There are syntactic alternatives possible even within these confines, however.

A number of adjectives in the pre-head position would typify, perhaps, the most straightforward type of nominal style. Qualifiers following the head noun might also serve description, especially prepositional phrases and adjective clauses which can accommodate further nouns groups. An author writing "the small delicate woman whose name was Alice" certainly get more descriptive mileage than by using pre-head adjectives only. This example indicates another syntactic possibility: the complement, a noun/adjective that follows a copula verb, "Alice was small and delicate." In example one of the Appendix, over half the primary predications are relational processes (cf. Gregory 1983). A nominal style, then, may be more fully described by the level/rank of structure in which it operates: at clause, as a complement; or at group, as a modifier (pre-head)/qualifier (post-head). An author may depend on one of these nominal strategies exclusively, or may use a combination. Either way, the more that is added to the nominal group, the more the descriptive flavour of the passage is developed. And there are semological implications: copula verbs taking

complements are explicitly realized relational processes; modifiers involve implicit relational processes (cf. Asp 1985), and qualifiers may involve a variety of predicational roles.

Narration focuses experientially on action and the circumstances that surround it. 'Syntactically' this translates as predicates and adjuncts, adjuncts being the structural elements that are commonly realized by adverbs, prepositional phrases and subordinate adverbial clauses. Semologically, adjuncts give time, place or manner information, answering WH interrogatives. Action and mental processes are the typical semological realizations for the syntactic predicates that are manifested in narrative prose. Their primary function is to advance the plot. In example two of the Appendix some of the action processes are 'fly', 'sweep', 'brings', 'alight', 'come', and the mental processes are 'discover', 'review', 'alarmed', 'abound'. Time gives the actions a chronological sequence; place contributes to the setting and manner develops action. In narration authors have various stylistic options available to them such as theme marking to emphasize one circumstance over another. Many authors use adjuncts of manner seldom, and genre specifications dictate how they use time and place. In science fiction time might be ignored entirely, or used in very general terms; whereas, an elaborate spatial setting may get considerable play as the author develops his/her imaginary world. Time adjuncts may be few, or realized in simple adverbs; whereas, place may warrant extended subordinate clauses.

Some authors have distinct passages of description and narration. Others may use both strategies within a single paragraph: a sentence of description to set the scene followed by two of narration to advance the plot. Still, an analyst could separate the descriptive, inherently nominal, from the narrative, inherently verbal. There are passages, though, where the use of participles blurs the distinctions between description and narration almost completely.

In the fifteen graphological sentences in Woolf's passage from *To The Lighthouse*, there are twice as many propositions and five times as many predications. The sentences are sometimes compounded, and are often complex, not always in the sense of embedded clauses though. This is not atypical of Woolf's style in her unmarked descriptive passages, but the complexity is not in the complements of her sentences, but rather in her adjuncts (cf. Malcolm 1986). Many are predicative, in that they include non-finite clauses: "And so, nosing, rubbing, they went to the window on the staircase, to the servant's bedroom, to the boxes in the attic, descending, blanched the apples on the dining room table, fumbled the petals of roses, tried the picture on the easel, and blew a little sand along the floor" (cf. Gregory 1982). Modification and qualification still mark the nominal groups, but less than in her other descriptive passages. Qualifiers are almost always realized by

prepositional phrases in this passage, unlike the predominance of relative and non-finite clauses filling this position elsewhere.

Semologically, the numerous, often seriated adjuncts, usually fulfill the role of place or manner. The forty place circumstances are typically codified in prepositional groups, and the twenty circumstances of manner are realized by adverbs and 'as if...' clauses. Time is relatively unimportant to the text. The emphasis on circumstance in this passage, by frequency of occurrence alone, is supported by the 'focus' often given the circumstances, where the actor-subjects have been displaced to second position in the clause (see sentences #4,6,7,8,10, 12,13,14,&15). Not surprisingly, a shift in the process type which predominates is a marked feature of this particular descriptive passage, as well as the shift in import of the circumstances. Unlike the relational process focus of Woolf's unmarked descriptive passages, the predominant process in this passage is action-oriented (*ibid*). Two-thirds of the total processes reflect action, and of these, half are within the primary predication. The remaining third of the processes are fairly evenly split between mental and relational processes. Half of the mental processes occur within the primary predication, as processes of verbalization signify direct speech. The relational processes in this passage are deeply embedded.

Action and mental processes, unusual in conventional description, make the description more vivid, 'real'. However, the actors who perform these actions and process these thoughts and feelings are inanimate. In the first paragraph it is the 'darkness' which 'came' and 'swallowed', 'nothing' that 'survives', an ambiguous 'somebody' who 'laughs', and 'a hand' and 'furniture, which, through passivization, relegate the actual actor as unimportant. In the second paragraph it is the 'airs' which 'creep', 'fumble', 'reply', 'sigh' and 'toy'. Personification, coupled with the prevalence of action processes and place and manner circumstances, creates an illusion of real action happening in a real place by real people. The verbal emphasis of this passage, then, makes it bear a striking resemblance to narrative passages. However, the relative unimportance of time points to something different: a nominal description which is very verbal, verging on narrative.

In Melville's moving passage describing Ahab losing his leg, courtesy of Moby Dick, there are ten graphologically defined sentences. Half of these include a single independent clause, the other half average two. Seven of the ten sentences include fifteen dependent clauses and one beta (cf. Gregory 1983). The four adverbial clauses realize time and manner equally. The three nominal clauses operate as objects twice and complement once. The eight adjectival clauses operate within the noun group as qualifier. Seven of the ten sentences also include nine non-finite clauses: six

perform as a qualifying adjectives, and two include infinitives. In addition, ten participles function as modifiers in the noun groups of four sentences. All told, then, there are fifty-one predications in the ten sentences - fifty in nine, if the four word sentence three is overlooked. Since typical narrative passages focus on action, five or six processes per sentence may not seem unusual. However, in this particular passage, sixty per cent of the predications operate within noun groups as qualifiers, making the verbal emphasis of the passage questionable.

The descriptive nominal quality of the passage is also carried by modification. As mentioned, the qualifiers are more often realized by relative/adjectival and participial clauses, than by simple prepositional phrases. And it is in the non-finite qualifying clauses and the participial modifiers where the description carries the action of the narrative with it. The description, generally following the predicate, retards the pace of what must have been a very quick action in order to emphasize its enormous emotional and spiritual significance.

Nevertheless, the sequence of events involving human protagonist and animal antagonist signifies a narrative passage, albeit a highly descriptive one. In fact, narration and description are almost inseparable. Narration, usually action-oriented, is not so here. There are no action processes in the primary predications of this passage; rather, there is an almost even split between mental and relational processes. There are twelve embedded action processes, twenty-one mental processes (sixteen embedded), and thirteen relational processes (six embedded). Time and place are important circumstances in the experience (time is realized eight times, place ten). However, simple adverbs realize time and prepositional phrases, place. The eighteen manner adjuncts, emphasized by extended prepositional phrases and adverbial clauses, support the emotional significance of the scene, as do the numerous mental processes of reaction. Obviously, there are different types of narration, some particularly amenable to the emotional attitudes expressed here. That Melville has chosen, consciously or not, this mode of narration seems particularly apt, given the spiritual impact of Ahab's leg being torn off by "a monomaniac incarnation" of the devil.

In the short story "Living Like Weasels", from *Teaching a Stone to Talk*, Anne Dillard's concluding passage uses participles in a rather different way than either Woolf or Melville. Different, perhaps, because the strategy employed is not exactly description or narration; yet, it bears a striking resemblance to both.

Because only three sentences include more than one independent clause joined by additive conjunction and nominal ellipsis, almost two-thirds of the predications in the twelve sentences analyzed are in the primary predication. Most of the final third are in non-finite

clauses distributed between complements at the rank of clause and nominal qualifiers at group. Only three sentences include dependent clauses, always as nominal qualifier.

This text resembles both descriptive and narrative passages in the almost equal distribution between action and relational processes. Selections in mood, modality, aspect and voice, though, diminish the reality of both. Half of the primary action predications are tempered by either aspect and modality (sentences #1 & 2), or voice (sentence # 10). The completed aspect and modality of obligation in "I should have lunged..." negate the actual completion of any real act. And almost all of the primary relational processes are coupled with possibility modalities, which add an air of hypothesis to the processes that may or may not be realized ("I could very calmly go wild" and sentences: #4,6,11,12). The last two of these are also written as rhetorical questions supporting the insubstantiality of the relations involved. The ambiguity resulting from such tempering is often strengthened by an ambiguity in semological interpretation: 'live', the primary predicate three times, is labelled a relational process each time, although it can sometimes be used as an action process too, and 'go' is called an action process twice, although some might consider it acting relationally. This ambiguity is not reflected in the secondary and tertiary predications, which, often realized by non-finite clauses, are not subject to such emotive colouring. Action processes make up over half the embedded predications.

Typical of narrative tradition, place and manner add circumstantial information ten times (however, only in prepositional phrases, for the most part), and time is unimportant. Typical of descriptive strategy, attributes and locators act as complements, and nominal groups include modifiers and qualifiers. Modifiers are not prevalent in the passage, but the numerous non-finite and relative clauses that realize complements and qualifiers act as a descriptive alternative.

Predicational roles and transitivity selections, then, do not characterize this passage as primarily descriptive or narrative. Yet some of the features described (the balance between relational and action process, and the development of both verbal and nominal styles in adjuncts, complements and qualifiers) liken it to the passages previously described. Participles have been used as elsewhere, to add action to stasis, verbal to nominal, narrative to descriptive, or vice versa. But, in this final passage, aspect, voice, modality and mood selections in effect 'undo' the actions and relations. Dillard introduces the passage with "I missed my chance". Consequently, there is nothing left for her to do except speculate and question what might be, but isn't. Description has, perhaps, more of a place in this interior monologue than narration. There are no actual events in her reverie, but the description of what might have been involves events ('curling', 'leaning',

'breathing', 'exploring'), as well as reflective insight ("Down is out, out of your ever-loving mind and back to your careless senses"), and speculation ("Could two live that way?").

Lyons writes about narration and description, "These two developmental patterns almost always go together. A narration, of course, tells a story or relates an event, and a description provides a sensual impression of that story or event. In this type of paragraph the reader is made to stand at the elbow of the writer, so that the reader can see and feel what the writer sees and feels, That is why the sensual quality of the language is so important here - it conveys to the reader not only what happened but what it looked, sounded, and felt like" (p.197). Despite the perceptiveness of his observation, his examples (see Appendix #3) show little more than description being used as a framing device for narration, and vice versa.

Climactic passages do not just happen: they are often a consequence of quite ingenious stylistic maneuvers. Interestingly, Woolf, Melville and Dillard have all resorted to the same device to add drama to their work. The effect of using participles, where the verb is made somewhat 'subservient' to the noun, is tension; a tension born of unpredictability that adds contradiction, that confronts our stylistic and strategic expectations, that revitalizes language and creates memorable works of literature.

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Appendix

1. Colonel Prynne, who is sixty-seven, lives and carries on his singular pursuit in a rambling, thatch-roofed, five-hundred-year-old cottage in the tiny village of Spaxton, Somerset, and there, on a recent sunny afternoon, he received us. A man of medium build who retains a military carriage, he was sprucely turned out in a brown suit, a tan jersey vest, a green shirt and tie, and tan oxfords. He has a bald, distinctly egg-shaped head, wears a close-cropped mustache and black shell-rimmed glasses, and seems always to have his nose tilted slightly upward and the nostrils faintly distended, as if he were sniffing the air. After taking us on a rather cursory tour of his garden, which is as neat and well tended as its owner, he remarked crisply that it was time to get cracking, and we followed him indoors, past an enormous fireplace, which burns five-foot logs, and up a flight of stairs to a room that he calls his study.

* "Talk of the Town," The New Yorker (23 May 1964): 37. (c) 1964, The New Yorker Magazines, Inc. Reprinted by permission.

2. As soon as the pigeons discover a sufficiency of food to entice them to alight, they fly round in circles, reviewing the country below. During their evolutions, on such occasions, the dense mass which they form exhibits a beautiful appearance, as it changes direction, now displaying a glistening sheet of azure, when the backs of the birds come simultaneously into view, and anon, suddenly presenting a mass of rich deep purple. They then pass lower, over the woods, and for a moment are lost among the foliage, but again emerge, and are seen gliding aloft. They now alight, but the next moment, as if suddenly alarmed, they take to wing, producing by the flappings of their wings a noise like the roar of distant thunder, and sweep through the forests to see if danger is near. Hunger, however, soon brings them to the ground. When alighted, they are seen industriously throwing up the withered leaves. . . .

The Practical Stylist by S. Baker, p. 63

3. I set about gaining Piquette's trust. She was not allowed to go swimming, with her bad leg, but I managed to lure her down to the beach--or rather, she came because there was nothing else to do. The water was always icy, for the lake was fed by springs, but I swam like a dog, thrashing my arms and legs around at such speed and with such an output of energy that I never grew cold. Finally, when I had enough, I came out and sat beside Piquette on the sand. When she saw me approaching, her hand squashed flat the sand castle she had been building, and she looked at me sullenly, without speaking.

That beach is a vast and preternaturally clean and simple landscape. It is like a piece of the moon. The surf had pounded the floor solid, so it was easy walking, and everything left on the sand had been twice changed by the waves. There was the spine of a shell, part of a broomstick, and part of a brick, both of them milled and broken until they were nearly unrecognizable, and I suppose Lawrence's sad frame of mind--for he kept his head down--went from one broken thing to another. The company of his pessimism began to infuriate me, and I caught up with him and put a hand on his shoulder. "It's only a summer day, Tifty," I said. "It's only a summer day. What's the matter? Don't you like it here?"

Goodbye, My Brother," by John Cheever in
(Writing Fundamentals by J. Lyons (p. 198)

A.

So with the lamps all put out, the moon sunk, and a thin rain drumming on the roof a downpouring of immense darkness began. Nothing, it seemed, could survive the flood, the profusion of darkness which, creeping in at keyholes and crevices, stole round window blinds, came into bedrooms, swallowed up here a jug and basin, there a bowl of red and yellow dahlias, there the sharp edges and firm bulk of a chest of drawers. Not only was furniture confounded; there was scarcely anything left of body or mind by which one could say 'This is he' or 'This is she'. Sometimes a hand was raised as if to clutch something or ward off something, so somebody groaned, or somebody laughed aloud as if sharing a joke with nothingness: Nothing stirred in the drawing-room or in the dining-room or on the staircase. Only through the rusty hinges and swollen sea-moistened woodwork certain airs, detached from the body of the wind (the house was ramshackle after all), crept round corners and ventured indoors. Almost one might imagine them, as they entered the drawing-room, questioning and wondering, toying with the flap of hanging wallpaper, asking, would it hang much longer, when would it fall? Then smoothly brushing the walls, they passed on musingly as if asking the red and yellow roses on the wallpaper whether they would fade, and questioning (gently, for there time was at their disposal) the torn letters in the wastepaper basket, the flowers, the books, all of which were now open to them and asking, Were they allies? Were they enemies? How long would they endure?

So some random light directing them from an uncovered star, or wandering ship, or the Lighthouse even, with its pale footfall upon stair and mat, the little airs mounted the staircase and nosed round bedroom doors. But here surely, they must cease. Whatever else may perish and disappear what lies here is steadfast. Here one might say to those sliding lights, those fumbling airs that breathe and bend over the bed itself, here you can neither touch nor destroy. Upon which, wearily, ghostily, as if they had feather-like fingers and the light persistency of feathers, they would look, once, on the shut eyes and the loosely clasping fingers, and fold their garments wearily and disappear. And so, nosing, rubbing, they went to the window on the staircase, to the servant's bedrooms, to the boxes in the attics; descending, blanched the apples on the dining-room table, fumbled the petals of roses, tried the picture on the easel, brushed the mat and blew a little sand along the floor. At length, desisting, all ceased together, gathered together, all sighed together; all together gave off an aimless gust of lamentation to which some door in the kitchen replied; swung wide; admitted nothing; and slammed to.

V. Woolf To the Lighthouse (p. 118)

B.

You judge then, to what pitches of inflamed, distracted fury the minds of his more desperate hunters were impelled, when amid the chips of chewed boats, and the sinking limbs of torn comrades, they swam out of the white curds of the whale's direful wrath into the serene, exasperating sunlight, that smiled on, as if at a birth or a bridal.

His three boats stove around him, and oars and men both whirling in the eddies; one captain, seizing the lineknife from his broken prow, had dashed at the whale, as an Arkansas duelist at his foe, blindly seeking with a six inch blade to reach the fathom-deep life of the whale. The captain was Ahab. And then it was, that suddenly sweeping his sickle-shaped lower jaw beneath him, Moby Dick had reaped away Ahab's leg, as a mower a blade of grass in the field. No turbaned Turk, no hired Venetian or Malay, could have smote him with more seeming malice. Small reason was there to doubt then, that ever since that almost fatal encounter, Ahab had cherished a wild vindictiveness against the whale, all the more fell for that in his frantic morbidness he at last came to identify with him, not only all his bodily woes, but all his spiritual and intellectual exasperations. The White Whale swam before him as the monomaniac incarnation of all those malicious agencies which some deep-feeling men feel eating in them, till they are left living on with half a heart and half a lung. That intangible malignity which has been from the beginning; to whose dominion even the modern Christians ascribe one-half of the worlds; which the ancient Ophites of the east revered in their statue devil; Ahab did not fall down and worship it like them; but deliriously transferring its idea to the abhorred White Whale, he pitted himself, all mutilated, against it. All that most maddens and torments; all that stirs up the lees of things; all truth with malice in it; all that cracks the sinews and cakes the brain; all the subtle demonisms of life and thought; all evil, to crazy Ahab, were visibly personified, and made practically assailable in Moby Dick. He piled upon the whale's white hump the sum of all the general rage and hate felt by his whole human race from Adam down; and then, as if his chest had been a mortar he burst his hot heart's shell upon it.

Herman Melville Moby Dick (p. 159)

C.

I missed my chance. I should have gone for the throat. I should have lunged for that streak of white under the weasel's chin and held on, held on through mud and into the wild rose, held on for a dearer life. We could live under the wild rose as weasels, mute and uncomprehending. I could very calmly go wild. I could live two days in the den, curled, leaning on mouse fur, sniffing bird bones, blinking, licking, breathing musk, my hair tangled in the roots of grasses. Down is a good place to go, where the mind is single. Down is out, out of your ever-loving mind and back to your careless senses. I remember muteness as a prolonged and giddy fast, where every moment is a feast of utterance received. Time and events are merely poured, unremarked, and ingested directly, like blood pulsed into my gut through a jugular vein. Could two live that way? Could two live under the wild rose, and explore by the pond, so that the smooth mind of each is as everywhere present to the other, and as received and as unchallenged, as falling snow?

A. Dillard "Living Like Weasels"

MONOSEMIC METHODS

Charles Ruhl

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In one episode of Jack London's The Call of the Wild, the focal character is a dog named Buck, whose master, Jack Thornton, gets involved in a boasting contest.

1. At the end of half an hour one man stated that his dog could start a sled with five hundred pounds and walk off with it; a second bragged six hundred for his dog; and a third seven hundred.
"Pooh! Pooh!" said Jack Thornton. "Buck can start a thousand pounds."
"And break it out? And walk off with it for a hundred yards?" demanded Matthewson...
"And break it out, and walk off with it for a hundred yards," John Thornton said coolly.
"Well," Matthewson said, slowly and deliberately, so that all could hear, "I've got a thousand dollars says he can't."

The drama of the incident comes from an ambiguity in the phrase break out:

2. Matthewson's sled, loaded with a thousand pounds of flour, had been standing for a couple of hours, and in the intense cold (it was sixty below zero) the runners had frozen fast to the hard-packed snow. Men offered odds of two to one that Buck could not budge the sled. A quibble arose concerning the phrase "break out." O'Brien contended it was Thornton's privilege to knock the runners loose, leaving Buck to "break out" from a dead standstill. Matthewson insisted that the phrase included breaking the runners from the frozen grip of the snow. A majority of the men who witnessed the making of the bet decided in his favor, whereat the odds went up to three to one against Buck.

Even Thornton has doubts, but Buck proves equal to the task. On command, he leaps first to the right, then to the left, freeing the runners:

3. The crackling turned into a snapping, the sled pivoting and the runners slipping and grating several inches to the side. The sled was broken out.

Thornton then commands Buck to move forward: slowly, at first jerkily, the sled begins to move, continuing to gain momentum as the dog successfully covers the hundred yard course.

In this context, what does break out mean? How many break out phrases are there? Normal linguistic reasoning goes as follows. By an AMBIGUITY TEST, there are two meanings, and thus clearly two expressions. However, it is not obvious that the ambiguity is in the verb or elsewhere. By a SELECTIONAL TEST, if the "patients" (the things that break) belong to the same category, the ambiguity might parallel the difference of break the window and break the bottle. But there are no direct object patients here with break out. In both meanings of break it out, it refers, as the context shows, to the sled or its runners, and these do not break. We apparently cannot ask (for either meaning) the simple question "What breaks?" We must conclude that this is not the same break that occurs with window and bottle. Further, by a COMPOSITION TEST, the usual meanings of break and out do not add up to either of the meanings needed: 'free the runners' and 'begin moving'.

Thus by every diagnostic test that linguists apply in such circumstances, we reach one conclusion: these two break out expressions are clearly IDIOMS. They do not relate generally to other uses of break or out, and thus are laws unto themselves. Further, they represent a highly common type: they are Phrasal Verbs (or Verb-Particle Constructions), non-compositional combinations of a verb form and a preposition form, the latter called a "particle." A phrasal verb, while formally two parts, semantically acts like a single verb. Like other phrasal verbs, we have alternative syntax with a full noun phrase (break the sled out, break out the sled), but only pronoun-first order with a pronoun (break it out, *break out it).

This is well-established reasoning, traditionally (as implicitly in dictionaries) and currently. Since it is commonly accepted and applied, it appears to be one of the great triumphs of linguistics, a truth safe for the ages. Yet it comes from minimal investigation, which combines lack of curiosity and blind faith in paraphrase. Once we supply 'free the runners' and 'begin moving' (or other paraphrases) to "solve" the idiom problem, there is no need to look further, because break out has been finessed out of existence.

A conclusion of "idiom" should be an admission of scholarly defeat, at times justified, but oddly often reached before a linguist has even attempted an analysis. Admittedly, the two examples of break out here are initially puzzling; they certainly pose an affront to scholars who expect their conscious awareness to make immediately clear all sources of meaning. Yet, for scholars who do not automatically make puzzling phrases into idioms, there are helpful hints in the text. In (2), the fuller expressions "break out" from a dead standstill and breaking the runners from the frozen grip of the snow clearly explain the two different uses. They pinpoint what breaks: respectively, standstill and grip. Further, out could appear in the second phrase (break runners out from the frozen grip) and could be omitted from the first (break from a dead standstill); so whatever their status or roles, both break and out here make distinctive contributions.

Our initial puzzlement continues to abate with even more data. A "patient" need not be (as "usually") a transitive object or intransitive subject, but may be implicit (McEnroe broke Lendl's serve, McEnroe broke) or explicit as the object of an preposition (He broke through the wall). When through, out and from occur with break, another set of "usual" contexts applies: a direct object then can be something (like sled or runners) that, while not breaking itself, is affected by the breaking. Of course, in any context when a patient is not mentioned, some interpreters may not know what breaks and assume varied possibilities, and this occasions the dispute narrated in the text. (Actually, the disagreement is between a "standstill" meaning and BOTH "grip" and "standstill". The latter, where Buck must both free the runners and move the sled, is Matthewson's view, which prevails. Excerpt (3) exemplifies only "grip")

The fuller expressions show that the ambiguity comes from what is EXTERNAL to break out; locating it in these words is a mistake, and only theoretical fiat would require that it be duplicated there. Some of the meaning included in our paraphrases is provided by other words or by extralinguistic means.

Thus, we cannot claim that break and out here evidence any different semantic status than elsewhere. This conclusion does not automatically dictate a finding of monosemy, but it does eliminate one reason for concluding multiple meaning. If all such reasons are equally faulty, what then?

The kind of example I use is crucial. Instead of citing invented freestanding intuitional sentences, I take an example from actual use, one which necessarily

involves a larger context. I then appeal to other sentences within the larger context. Such actual data reveal that semantic and pragmatic contributions to meaning differ from what is usually thought: much LESS meaning is supplied by break out than appears so when sentences are quoted as isolated data.

When we cite invented examples in isolation, we are led to attribute more meaning to particular words than they provide. When we attempt to "ignore" or "neutralize" context in any circumstance, some context will not be "factored out" but rather be displaced into what exclusively holds our attention. (The general problem: thinking ourselves fully uninvolved observers, we project our own attributes onto that which we study.)

The word idiom is used to describe many kinds of linguistic singularity. All aspects of language are singular/idiosyncratic/individuated/idiomatic at some level of abstraction. With regard to semantics, an expression is considered an idiom when it does not exemplify the COMPOSITIONAL ASSUMPTION: the meaning of a sentence is a composed sum of SOLELY its structured lexical parts (with perhaps a few "understood" or "empty" categories). Break out and many other phrasal verbs are judged idiomatic by this standard because their constituent words do not account fully for perceived meaning. However, that conclusion leads to an absurdity. So-called phrasal verbs come from a highly productive process; claims of idiomaticity lead us to conclude that productive processes are semantically unmotivated.

The break out examples do not include patient-objects, making the task of distinguishing semantic and pragmatic more difficult. For a simpler view of the problem, we can consider some transitive phrases with patient objects and the definitions supplied by Webster's Third New International Dictionary [W3]:

4. break the soil 'plow'
5. break an artery 'rupture the surface of and permit flowing out or effusing'
6. break the barriers in his way 'burst and usually to force a way through'
7. break a wrestling hold 'effect release or escape from'
8. break a habit 'discontinue'
9. break a camp 'pack up and leave'

By listing each of these as set phrases, W3 implies that they are not fully compositional; yet, for each phrase, referential details specialize the general sense of the words. This is especially noticeable in

break an artery, which includes what EXPERIENTIALLY RESULTS when an artery breaks.

W3's definitions are overspecific even by their own standards: soil can be broken by means other than plowing (e.g., a shovel or hoe), not all barriers need a force to break them (e.g., abstract barriers), and breaking a camp need not involve packing up. These definitions provide not the full range of referential possibilities (of break with each direct object), but rather the most likely and salient possibilities.

If the dictionary's purpose is to give the most practical concise advice possible, then these may be highly useful definitions. In most discourses, break an artery would communicate about what W3's definition provides. But this meaning comes not only from the meanings of the words. For an interpreter who is ignorant about the reality of bleeding, the words alone would not evoke it. Anyone studying discourse must take into account all the meaning included in W3's definition, but this necessity does not make all meaning semantic.

Note my phrase: anyone studying discourse. These words are likely misleading: discourse is not merely a special study of a "part" of linguistics. This is ALL study. We do not avoid the complications of discourse merely by idealizing. I assume that to idealize well we must concurrently account for all the complexities of actual use. Thus, a formalist like me must also be a diligent functionalist. Discourse factors are always present, never fully eliminated, in EVERY linguistic enterprise, however "ideal."

My point may have the appearance of a paradox. I claim break has a single unified meaning, which is highly abstract; but I am also arguing that it must be thoroughly studied in all its detailed concrete specifics, far beyond the extent even the largest dictionaries have felt necessary. This is a paradox only if we fail to see the intricate interdependence of unities and diversities: what is unified on one abstract level can be highly diversified on a slightly more concrete one. If levels of abstraction are confused, diversities may be abstracted too much and unities lost, or unities concretized and diversities lost. A mistake in assessing either unity or diversity leads to a mistake in the other, and each mistake compounds to others. In current semantic research, both unities and diversities are short-circuited. With the data base always too small, the full diverse range of break is unexplored and its unity unimagined; on inadequate evidence, artificial unities and diversities are posited, and actual unities and diversities are unsuspected.

If words contribute less to discourse meaning than usually thought, we must then conclude that the Compositional Assumption as presently conceived is incorrect. Instead of using it to judge productive processes idiomatic, we should conversely observe how productive processes UNDERDETERMINE meaning, and take such processes and products seriously in our standard of well-formedness. I propose:

10. WELL-FORMEDNESS CONDITION: A linguistic expression is semantically well-formed, and not idiomatic, when each of its constituent morphemes contributes, with a meaning evidenced elsewhere, to its perceived meaning.

By this, words can contribute to perceived meaning without fully accounting for it. The meaning of a sentence is still a function of its parts, but these parts are no longer solely linguistic. Condition (10) allows (though doesn't guarantee) the possibility that the verb break, as it semantically occurs elsewhere, occurs also in London's text.

The key word in (10) is perceived. This makes explicit the inescapable influence of extralinguistic factors on the observing linguist. We have no privileged direct knowledge of a word's semantic status. Actually, I assume that the SEMANTIC meaning of a sentence DOES meet the Compositional Assumption. The problem is that, as we "understand" meaning in any sentence (even in illusory "isolation"), we do not perceive MERELY semantics (although what we perceive is a function of this). The semantic status of a word is determined by its FIELD RELATIONSHIPS with other words: semantics is intralinguistic. But these field relationships are obvious for very few words, if in fact we know any at all. What we usually posit in our "features," "primes," "predicates," and "definitions" are amalgams of semantic status and the external "realities" to which our expressions refer. Many of the familiar standards of semantic theory (reference, truth, entailment, tautology, contradiction, etc.) necessarily involve pragmatic detail. "Meaning" is never merely semantic, not even in constructed logics.

The grounding that is supplied unconsciously and automatically to every sentence by our extralinguistic knowledge always makes perceived meaning more complex than the Compositional Assumption allows. (We can't help seeing also the bleeding.) Thus, condition (10) gives back the theoretical space that we have precluded and allows us to discover that grounding.

PARADOXICAL FUNCTIONS OF PASSIVES IN JAPANESE PRAGMATICS

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1. INTRODUCTION.

Shibatani (1985) has defined the prototype passives by examining a wide range of passive-related phenomena such as reflexives, reciprocals, spontaneous, potentials and honorifics. He shows the correlations of passives with these constructions. According to him, the main pragmatic function of passives is the "agent-defocusing", since passives generally do not overtly express agents (1985: 831). His definition verifies the universal usage of the passives as an impersonal/agentless construction. The Japanese passives also serve as impersonal construction.

However, there seems to be a paradox in the pragmatic functions of Japanese passives, for there are pragmatically two types of passives indicated by the suffix -(r)are: (1) the passives which are considered the impersonal/agentless construction, following the universal usage of the passives. They indicate that an event being described has happened without the will or responsibility of the referent of the subject. (2) the adversive passives, which indicate the recipient's (speaker's, in my analysis) feelings of suffering or dislikeness of the action done by the agent.

In this paper, I intend to demonstrate that there are pragmatically paradoxical functions in the Japanese passives: one function is to form the impersonal construction which suppresses the agent and does not indicate the speaker's subjectivity at all, and the other is to clearly indicate the speaker's subjective judgment toward the matter he describes. That is, the former usage of the passives does not indicate the speaker's subjective feelings and the latter usage of the passives clearly indicates that the speaker perceives the matter as adversity. This type of passives indicates that the negative perception is the feeling of the speaker, but not of the recipient of the action having been done by the agent. The choice of the passive for the adversity connotations is a strong indication of the speaker's subjective judgment of the matter he describes, when there is a choice of expressing the same event in an active voice.

First, the core/proto semantic property of the affix -(r)are will be examined. Then, I shall demonstrate the pragmatic effects of the Japanese passives which are paradoxical.

2. THE SUFFIX -(R)ARE IN JAPANESE.

The form of the affix -(r)are in Japanese is shared by four grammatical functions: (1) passives, (2) spontaneous, (3) potentials, and (4) honorifics as exemplified below.

(1) Passive: Yamada-san wa Tanaka-san ni nagur-are-ta.

Mr. Top. Mr. Agnt hit-Pass-pst.

"Mr. Yamada was hit by Mr. Tanaka."

(2) Spontaneous:

Tanaka-san ga Yamada-san o nagut-ta to omow-are-masu.

Nom. Acc. hit-pst. Qt. think-Spont-polite

"It can be thought that Mr. Tanaka hit Mr. Yamada."

(3) Potential: Mai-asa 5-ji ni oki-rare-masu ka.

every morning o'clock at get up-Pot.-polt Q.

"Can (you) get up at 5 every morning?"

(4) Honorifics: Sensei wa mai-asa 6-ji ni

teacher Top. every morning o'clock at

oki-rare-masu.

get up-Hon-polt. "My teacher gets up at 6 every morning."

Hashimoto (1969), Makino (1974), and Araki (1980) argue that the Japanese passive suffix -(r)are is derived from the notion of jihatsu, "spontaneous", which refers to occurrences beyond human control, such as the creation of mountains, or the change of the state of water to steam. Araki claims that a respectable entity for Japanese must be what/who exists beyond one's control, force, or power. If it is the case, the use of the same suffix -(r)are for the respectful form of honorifics is sound. As for the use of the suffix for potentials, Hashimoto and Araki claim that the concept of jihatsu "spontaneous" underlies the fundamental meaning of potentials. Thus, many interpretations of the suffix as spontaneous can also be interpreted as potentials. Sentences in (5) illustrate this point.

(5) Hannin wa ano ie ni kakure-te iru to kangae-rare-masu ne.

criminal Top that house at be hiding Qt. think-Suffix-polt part

"It can be thought (We can think) that the criminal is hiding in that house."

Araki explains this fact that an event/state (which is self-generated) and ability are given by something beyond human control or will, but not what one intentionally obtains with his will power.

As for the use of -(r)are for passives, it also seems to be a logical choice: the core meaning of the suffix is spontaneous (which is totally agentless) and the basic pragmatic function of the passives defined by Shibatani is to defocus the agent. That is, all of the four functions (i.e., "spontaneous", "passives", "potentials", and "honorifics") in Japanese seem to be achieved by suppressing or erasing the agents.

Since the Japanese suffix -(r)are indicates passives, spontaneous, potentials and honorifics, the VP with the suffix can be interpreted as spontaneous or potential as discussed for sentence (5). Another example is sentence (3), which can be interpreted as potential or honorific. (3) is an interrogative sentence, in which the subject NP is often omitted. Ellipsis occurs quite usually in Japanese especially when it refers to either the speaker, the addressee in interrogatives, or a third person that has been mentioned in the previous discourse. Thus, the intended meaning of sentences such as (3) can be detected only by the relationship between the speaker and the addressee, and/or the context. If the speaker is inferior to the addressee, the suffix is used for forming the respectful form of honorifics, since no inferior normally asks his superior's capability unless the previous context allows. For example, if the superior had indicated that he had never been able to get up early and yet he would have to get up at 5 in the following morning, (3) can be interpreted as potential. The suffix in (6) below can be interpreted as either a respectful form, potentials, or passive.

- (6) Ashita mo k-orare-ru n desu ka.
 tomorrow also come-suffix-pres. compl. copla Q
 "Is it that you are coming tomorrow too?" (Honorific)
 "Is it that you can come tomorrow too?" (Potential)
 "Is it that (he) is coming (on you) tomorrow too?" (Passive)

As mentioned for (3), the suffix can be interpreted as honorific or potential, depending on the relationship between the speaker and the addressee, and/or the previous context. The suffix in (6) can also be interpreted as passive, depending on the context, since the subject NP is missing. If the context indicates that the addressee had been annoyed by a third person coming to him everyday, (6) would be considered the non-regular (adversive) passive.

As shown above, the distinction between the four meanings indicated by the suffix -(r)are is extremely pragmatic. As Hashimoto, Makino and Araki claim, if the basic function of -(r)are is spontaneous and other functions are derived from it, it is natural that the same sentence can indicate two or three meanings as in (6). That is, the semantic source for the four functions is only one.

Brown and Levinson (1978, 1987) claim that the use of impersonal constructions such as passives is one of the universal strategies of politeness. In Japanese, the suffix -(r)are and the inchoative verb naru 'become' are used to form respectful forms of honorifics as in (7).

- (7)a. Sensei ga sono hon o o-kak-i ni nar-imashita.
 teacher Nom. that book Acc. hon.-write become
 b. Sensei ga sono hon o kak-are-mashita.
 "(My) teacher wrote that book."

Araki and Ikegami (1981) have independently claimed that the passive suffix -(r)are and the inchoative verb naru 'become' indicate that an incident happens by itself from an unknown source, which is outside of human "control." Both scholars also claim that this indicates the Japanese conceptual attitude for a respectable existence, whether this existence is human or non-human. They argue that the use of these semantically impersonal items for the respectful form reflects the Japanese value of a natural occurrence rather than human force. Sentence (8) is a classical expression for the situation where the Lord is appearing in front of people.

- (8) Otono-sama no o-nari. (Ikegami's 138, p.252)
 Lord (Araki, p.39)

"Lord has arrived (appeared)."

Ikegami explains that naru in (8) indicates that the Lord was non-existent and now has appeared by a superhuman power. In other words, a matter described with naru is perceived as what is beyond one's "control." A question arises as to why the respectful form is universally expressed by means of the linguistic items such as the passives and the inchoative verb. The answer seems to lie in the concept of "control."

Comrie (1981) discusses the totality of semantic roles, such as agent, force, instrument, experiencer, and patient in a universal inventory. According to him, there is a degree of control: full control, potential control and no control. Sentences in (9) illustrate the degree:

- (9)a. Full control: I destroyed the documents.
 b. Potential control: I mistakenly destroyed the documents.
 c. No control: I was threatened by a gun point and destroyed the documents.

As seen in (9c), in the concept of control, the passives indicate that there is no control in the part of the subject, whether it is a human or a non-human. This seems to be the universal understanding of the passive construction: thus the passives are considered one of

impersonal constructions which are typically used for expressing politeness which requires avoidance of indication of the speaker's imposition. The Japanese suffix -(r)are also indicates no control in the part of the subject and is used for forming impersonal constructions such as passives, spontaneous, honorifics and potentials in the Japanese concept.

We have seen the core semantic function of the suffix -(r)are, which is "no-control" in the part of the referent of the subject NP or which does not implicate even an existence of an agent as observed in the use of it for spontaneous. In the following section, I shall demonstrate the paradoxical functions of the Japanese passives in pragmatics.

3. PRAGMATIC FUNCTIONS OF JAPANESE PASSIVES.

Benveniste (1971) argues that man constitutes himself as a subject in and through language, because the concept of "ego" is established by language alone in reality. Accordingly, he claims that "ego" is where we see the foundation of "subjectivity", which is determined by the linguistic status of "person" (p.224). Jackendoff(1978) also assumes that "grammatical evidence can play a direct role in forming or confirming theories of cognition" (p.203).

In fact, the same event can be described in different ways in terms of structural or lexical choice, depending on how the speaker perceives it: his perception may be coded grammatically. For example, in choosing an active voice or passive voice in describing the same thing, the choice is made by the speaker, according to his perception of the event. Sentences (10) illustrate this point:

(10)a. Jim stared at Susan.

b. Susan was stared at by Jim.

In (10), the event described is the same: Jim is the one who looked at Susan, and Susan is the one who was looked at. In other words, the agent of the event is Jim and the recipient of the action is Susan. However, the difference lies on the grammatical roles of Jim and Susan: the referent of the subject is Jim in (10a) and Susan in (10b). In semantics, (10) can be explained that the speaker of (10a) is taking Jim's point of view, since this NP is the subject which receives the highest degree of "focus" or "attention" in the hierarchy of grammatical relations: subject > direct object > indirect object > oblique objects (Shibatani, 1985: 832). It can be said that the speaker's perception of the event may be interpreted as centering on the referent of the subject, namely, Jim. Similarly, for (10b) it can be explained that the speaker is taking Susan's point of view, that is, the

speaker's perception of the event may be interpreted as centering on Susan. In short, the speaker's choice of grammatical codings reveals the speaker's perception of the event he describes.

In choosing the passive construction, one universally aims at expressing the matter in an impersonal tone. In Japanese, the speaker also chooses the passive construction for impersonal expressions, by which he can avoid indicating his subjective attitude toward the matter he describes. However, the usage of the passives in Japanese seems to be more complicated. In other words, there are pragmatically two kinds of passives: those for impersonal expressions and those for the manifestation of the speaker's subjective judgment. The manifestation of the speaker's subjectivity produced by the passives is adversive connotation which implies that the recipient of the action and/or the speaker do not like the agent's deed.

In Japanese pragmatics, as observed in the examples of the use of the passives below, the speaker's subjectivity manifests itself quite clearly. It seems to be extremely difficult to achieve neutral descriptions in this language¹. Akatsuka (1979) claims that Japanese syntax is extremely "sensitive to epistemological considerations based on the ego/non-ego distinction or the distinction of I/the other"(p.8). Sentences in (11) are some examples of the manifestation of subjectivity in Japanese.

- (11)a. Jiroo-san ga Michiko-san ni jisho o kure-ta.
 Nom. Dat. dictionary Acc. give-pst.
 "Jiroo gave a dictionary to Michiko (and I am grateful for that)."
- b. Michiko wa nyuugaku-shiken ni ochi-te shimat-ta.
 Top. entrance-exam. Dat. drop-Ger. finish-pst.
 "Michiko failed in the entrance examination (and I regret it)."
- c. Jim wa Tom ni seiseki-hyoo o mi-rare-ta.
 Agnt transcript Acc. see-Pass-pst.

"As for Jim, his transcript was seen by Tom."

In (11a), the choice of the giving verb kureru indicates that the speaker considers Michiko an "insider." With kureru he indicates his feeling of gratitude to Jiroo for giving a dictionary to Michiko. Shimau 'finish' in (11b) also indicates the speaker's subjective attitude toward the event, i.e., Michiko's failure in the exam. It connotes that the speaker feels unfortunate and regretful about the matter. (11c) is the passive which indicates adversity. Traditionally it is interpreted that the non-regular passives (adversity passives in Kuno's term) indicate that the "recipient" of the action is suffered from the agent's action. Thus, (11c) could be interpreted as "As for Jim, his transcript was seen

by Tom and Jim did not like it." However, I claim that the non-regular passive indicates the speaker's subjective judgment of the event: the "speaker" is the one who perceives the event adverse. The recipient may not find the event adverse. In the case of (11c), Jim might not have minded Tom's action at all, depending on his personality and grades. Thus, (11c) should be interpreted as "As for Jim, his transcript was seen by Tom and I do not like it." The speaker could have described the event with an active voice. The choice of the passive construction was made by the speaker himself. The choice of a structure, a lexical item, tone of the voice, etc. reveals the way the speaker sees the world.

The next point to be made on the passives is the way to classify the passives. In the literature, there is a distinction between direct and indirect passives. In Howard & Niyekawa-Howard (1976), it is defined that the direct passives refer to sentences like (12) in which the object was promoted to the subject. The indirect passives refer to sentences like (13) which contain an extra NP (NP-wa).

- (12)a. Taroo wa sensei ni shikar-are-ta. (Howard & N-H's 1a,
Top. teacher by scold-Pass.-pst. 1976:202)

"Taroo was scolded by the teacher."

- b. Sensei wa Taroo o shikat-ta. (H & N-H's 1b)
Acc. scold-pst.

"The teacher scolded Taro."

- (13)a. Tanaka-san wa sensei ni kodomo o shikar-are-ta. (H & N-
Mr. Top. teacher by child Acc. scold-Pass.-pst. H's 2a)

"Tanaka had his child scolded by the teacher."

- b. Taroo wa ame ni hur-are-ta. (H & N-H's 2b)
rain Agnt. fall-Pass.-pst.

"Taro was rained on."

As Howard & Niyekawa-Howard point out, this terminological distinction follows only syntactic criterion. It indicates neither semantic properties nor pragmatic effects that the passives indicate. Kuno (1976) classifies the passives also into two categories: the pure passives and the adversity passives. In his analysis, the pure passives are the direct passives and the adversity passives are the indirect passives in H & N-H's definition, although his analysis in 1983 seems to take more lexical approach: he claims that the distinction in passives is dependent on the semantics of verbs. The problem with the syntactic analysis is that it cannot provide a clear difference in pragmatic effects of the ordinary passives and of the passives with adverse or suffering connotations. A clear pragmatic classification is necessary in order to analyze the pragmatic effects of the Japanese

passives, since the same construction in syntax may indicate completely different implications in pragmatics, depending on the semantic properties of lexical items and contexts. In my analysis, both types of passives, direct and indirect, could produce adverse connotations. Thus, I use the terminology "regular passives" to refer to the non-adverse passives and "non-regular passives" to the adverse passives regardless of their syntactic features, but in a strictly pragmatic sense.

In my pragmatic classifications, the passives which produce adverse connotations are "non-regular" passives and those which do not are "regular" passives, regardless of their syntactic features. The passive sentences below show that both direct and indirect passives could indicate implications of adversity. Sentences (14) are the examples of indirect passives, which contain either intransitive verbs or an extra NP. Sentences (15) are direct passives, which are ordinary passives like those in English.

- (14)a. Kinoo ame ni hur-are-ta yo.
yesterday rain Agnt fall-Pass.-pst part.
"Yesterday it rained on me."
b. Kinoo wa kodomo ni hito-ban-juu nak-are-ta yo.
Top. child Agnt all night cry-Pass-pst part.
"Yesterday the child cried on me all night."
c. Jim wa Susan ni ano kitanai heya o mi-rare-ta.
Top. Agnt that messy room Acc. see-Pass-pst
"As for Jim, that messy/dirty room was seen by Susan."
d. Susan wa Jim ni kuruma o kowas-are-ta.
Agnt car Acc. break-Pass-pst.
"As for Susan, her car was broken by Jim."
(15)a. Jim wa chichi-oya ni donar-are-ta.
father-parent Agnt yell-Pass-pst.
"Jim was yelled at by his father."
b. Sono kodomo wa tomodachi ni nagur-are-ta.
that child friend Agnt hit-Pass-pst.
"That child was hit by his friend."

All sentences in (14) and (15) seem to indicate somewhat adverse connotations, rather than the simple statements of the facts in which the agent is defocused. As mentioned earlier, the syntactic classification of the passives seems to be problematic, since both indirect and direct passives could indicate adversity and there are also cases where neither of these passives indicate adversity at all. The following indirect and direct passive sentences in (16-17) do not produce any adverse connotations:

(16) THE INDIRECT PASSIVES:

- a. Tanaka-san wa kodomo o koochoo-sensei ni
 Tanaka-Mr. Top child Acc. school principal Agnt
 hyooshoos-are-ta.
 award-Pass-pst.

"As for the Tanaka's, the child was awarded by the principal."

- b. Jim wa ko-inu o kinjo-no-hito ni kawaigar-are-te iru.
 puppy Acc. neighbor Agnt. pet-Pass-Ger. exist

"As for Jim, his puppy is petted by the neighbors."

- c. Ano otoko wa tsuini tsumi o yurus-are-te, uchi e kaet-ta.
 that man finally crime forgive-Pass-Ger. home to return-pst.

"As for that man, his offenses were finally forgiven and went home."

(17) THE DIRECT PASSIVES:

- a. Sono-ko wa totemo yasashii huuhu ni moraw-are-te it-ta.
 that-child Top. very sweet couple Agnt receive-Pass-Ger.go-pst.

"That child was adopted by a very sweet couple."

- b. Susan wa shachoo ni home-rare-ta.
 president Agnt. praise-Pass-pst.

"Susan was praised by the president of the company."

- c. Ano okusan wa go-shujin ni totemo ais-are-te iru.
 that wife her husband Agnt very much love-Pass-Ger. exist

"That wife is loved by her husband very much."

All sentences in (16) and (17) indicate perfectly happy situations. As Kuno (1983) claims, my analysis also shows that the semantics of the verbs is largely responsible for producing the connotations of adversity as well as contexts. My claim in this paper, however, is that the use of the passives in Japanese indicates not only the speaker's point of view on the subject, but also the speaker's subjective judgment on the matter he describes. Especially with the no-regular passives, his perception of the world manifests itself.

4. CONCLUSION.

I have demonstrated the paradoxical functions of the passives in the Japanese pragmatics with the examples for the impersonal expressions and those for the adverse implications as the manifestation of the speaker's subjective judgment on the matters he describes.

With the impersonal expressions, the speaker can suppress the agent and at the same time he indicates a distance between the event and himself. That is, he detaches himself from the event as if it is not his business. In this way, he achieves to indicate his position, which is impersonal, toward the matter. This proto semantic purpose of the

impersonal linguistic means can be observed in the use of -(r)are for "spontaneous."

The regular passives, which indicate no adversity, produce more or less neutral tone about the matter the speaker describes. For example, in describing someone's introduction of someone else to the speaker, there are six ways to express the situation as in (18):

- (18) Jim wa watashi ni Susan o { (a) shookais-ita.
I Dat. Acc. introduce-pst.
(b) shookais-ite kure-ta.
Ger. give-pst.
(c) shookais-ite k-ita.
Ger. come-pst.
(d) shookais-ite it-ta.
go-pst.

"Jim introduced Susan to me { (a)."
(b) and I am grateful for that.
(c) although I didn't ask for that.
(d) and he left.

- e. (Watashi wa) Jim ni Susan o shookais-are-ta.
Agnt Acc. introduce-Pass-pst.
f. (Watashi wa) Jim ni Susan o shookais-ite morat-ta.
receive-pst.

"I had Jim introduce Susan to me."

The most normal way to describe the situation for (18) in Japanese pragmatics is either (b) or (f) with a donatory verb, which indicates the speaker's gratitude. (18a) in which the speaker NP is in the oblique position sounds pragmatically questionable when the VP does not contain any supporting verb such as kure-ru 'give', k-uru 'come' or ik-u 'go'. It indicates that the speaker wants to avoid expressing some negative feelings about the matter, by describing the situation as if he is talking about someone else's². K-uru 'come' in (18c) as a supporting verb can indicate the speaker's affective deixis³, i.e., he feels Jim's action to be imposing. Thus, it could indicate the speaker's feeling of annoyance. (18d) indicates Jim's action of introducing Susan to the speaker and his physical motion of going away from the speaker afterward. It does not reveal any subjective attitude of the speaker about Jim's action. (18e) with the passive also could be perceived as neutral since the verb "introduce" itself does not indicate any negative connotations. The sentence simply indicates that Jim's action was directed to the speaker without the speaker/recipient's control.

On the other hand, the non-regular passives indicate that the speaker perceived the situation adverse. The interpretations of the passives as adverse seem to be made based on the semantic properties of the verbs and/or the context. That is, the speaker interprets the situation as adverse, according to his knowledge of the world, and the individual context and the semantics of the verbs. The recipient may not perceive a particular situation as adverse even if the situation seems to be terrible for most people. For example, for the situation where Jim ate Tom's dinner, one may say, Tom wa Jim ni bangohan o tabe-are-ta "As for Tom, his dinner was eaten by Jim." The use of the passive indicates that the speaker perceives Jim's action adverse. However, on the particular day Tom might have had a stomachache and, in fact, he might have been happy about Jim's having finished his dinner. This example shows that with the passives the speaker indicates his affective deictic position (i.e. subjective feelings) with the recipient of the agent's action. In other words, he takes the recipient's side and describes the situation, by placing his point of view on the recipient: the use of the non-regular passives indicates the speaker's empathy with the recipient.

My analysis suggests that the indication of the speaker's perception as adverse toward the situation with the passives may be derived from the concept of uchi 'insiders' and soto 'outsiders', since the use of the non-regular passives indicates the speaker's empathy with the recipient. In other words, the pragmatic function of the passives as "adverse" may be one indication of the fact that the notion of uchi 'insiders' and soto 'outsiders' is strongly engraved in the Japanese language: with the passives, the speaker could express his perception of adversity toward the situation, since the passives indicate that one's action is uncontrollably directed to the recipient who is an insider to the speaker and the agent is an outsider. (The "insider" refers to someone either the speaker's family member or very close to the speaker psychologically). The concept of uchi 'insiders' and soto 'outsiders' seems to be engraved in the grammar of Japanese, as also observed in the usage of the Japanese giving verbs⁴.

In summary, the pragmatic functions of the Japanese passives are paradoxical: one function is to form the impersonal construction which suppresses or erases the agent and which does not indicate the speaker's subjectivity, and the other is to clearly indicate the speaker's subjective judgment toward the matter. In short, one

clearly indicates the speaker's subjectivity and the other does not at all.

NOTES

Abbreviations:	Ger.=gerundive	Pot=potential
Acc=accusative	Hon/hon-honorific	pres=present
Agnt=agent	Nom.=nominative	pst=past
Compl.=complimentizer	part=particle	Q=question marker
Copla=copula	Pass=passive	Qt=quotative
Dat.=dative; polt=polite; Spont=spontaneous; Top=topic marker		

1. See Tokunaga, 1985 and 1986.
2. See Tokunaga, 1986, 1988 and 1989.
3. Affective deixis was introduced in Tokunaga, 1986. It indicates the speaker's personal relation with a participant in the speech-act (typically the referent of an NP in a sentence), i.e., the speaker himself or the speaker-in-law. The speaker-in-law was also introduced in Tokunaga, 1986. It refers to a participant whom the speaker particularly feels closer to as his "insider."
4. See Tokunaga, 1988.

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VIII

LANGUAGE AND SOCIETY

COLLEGE SLANG IN THE CONVERSATIONAL STRUCTURE

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Anthropologist Michael Moffatt, in his 1989 Coming of Age in New Jersey--the report of a ten-year study of undergraduate life in a large, public, American university--estimates that "the average time spent on friendly fun on weekdays in the middle of the semester was a little over four hours a day." (33) And, according to Moffatt, a large portion of this time was spent in "endless verbal banter." (33) Furthermore, college students have long been recognized as the facile creators and users of a group-identifying vocabulary called college slang. Any ordinary undergraduate class of twenty can come up with at least two hundred items of current campus slang from one class meeting to the next, as my students at the University of North Carolina have shown over the last seventeen years. During this past academic year (1988-89), an enterprising class of nineteen undergraduate honors students enrolled in a seminar with Professor Pamela Munro collected, defined, exemplified, and published close to two thousand items in A Dictionary of Slang Words and Expressions Used at U.C.L.A.

Clearly, then, these two facts are certain: college students talk a lot, and they have at their disposal when they talk many of their own words. But how do these two facts fit together? Slang provides lexical substitutions in ordinary syntactic constructions for words that are part of a more general, standard vocabulary. But speakers do not merely plug slang words in willy-nilly throughout a discourse. Where, then, is college slang likely to occur in the conversational structure, and why at those points?

This paper offers some preliminary observations and suggestions for answering these questions. It is based on talk among undergraduates at UNC-CH recorded spring semester of 1989 by four students in my English 36 class--Elizabeth Barden, Lori Belle, Chris Carter, and Anne Hoover. The good will and cooperation of these students have been essential, because my presence in a group of college students, even as an observer, would undoubtedly alter the conversation.

On reviewing the snatches of conversation reported by these students I found some of my

suspicions about the occurrence of slang in conversation confirmed. In keeping with its social function, slang does occur most predictably at the margins of conversation where the imparting or exchange of new information is not the main goal, e.g., in nouns of address, greetings, and feed-back signals.

One student reported a conversation between two female friends that began this way:

Female 1: Hello, bitch!

Female 2: Hello, bitch!

Female 1: This is the day from hell, no doubt about it! I have just been with my T.A. for almost three hours and Gordon is going out with some other girl. Her name is Rhonda Renee. Can you believe that shit? (screaming at the top of her lungs) Rhonda Renee, I hate you worse than you will ever know.

Here slang is used in the greeting and in the catalog of misfortunes.

In another example of slang used in a greeting, Chris Carter reports this interchange between himself and a female acquaintance on campus:

Female: Hey, Chris!

Chris: Howdy, chick!

Afterwards Chris wrote out these comments on his greeting: "Whereas the normal greeting would be Hey, Linda, Sally, etc., in this instance, though, I could not remember the girl's name. So I had to stray from the conditioned response and go with a not-so-often-used expression, an energetic tone of voice, and a smile over-emphasized for the situation."

Slang functions at the opening of conversations as a way to establish rapport. The fact that slang can sometimes be humorous strengthens its function as an ice-breaker in a situation in which strangers find themselves in the same space. Here is an example recorded by Elizabeth Barden in which slang was used to acknowledge in speech a common plight that the participants felt.

Five girls were waiting in the bathroom in the student union. Finally one of the girls glanced up and around at the rest. Then she turned to the mirror and promptly stated, "My hair looks so awful. I hate rain. It always makes my hair friz out. I look like the reject French Poodle Queen from hell."

Subject matter also seems to trigger off the use of slang. In an hour long tape recording made in a dormitory room by student Lori Belle (with the knowledge of the occupants but not of those who just dropped in to visit) most of the slang used was

concentrated in two sequences, both having to do with fraternity activities. Here is one of them.

One of the residents bursts into the room.

X: Y'all--awesome shirt. Y'all the tunnel is out of control. It's already half way over the house. They're expecting 500-800 people.

A: My God.

X: They had 5-800 last year, and they're expecting more tonight. [xxxx?] It's Friday night.

A: Cool.

B: That's awesome.

X: And I've already gotten the cup. And they have the...some cups from last year, the cream one..

A: Whatever.

[Chorus of voices as a male and a female walk in.]

X: Y'all. They're expecting 5-800 people at this tunnel party.

C: When is it?

X: Tomorrow night. And this tunnel is already over half the house.

C: O my God.

X: They said y'all come out tomorrow and we're going to make it bigger and better than ever. They have cardboard everywhere. It's gonna be--it's just--you know, d.j.'s--I mean, it's gonna be awesome. Y'all really need to come.

In this segment, a female narrator uses slang (awesome, out of control) for purposes of positive evaluation. The other participants, all females, use slang in their positive feedback (awesome, cool). Interestingly, three of the twelve tokens of awesome in the sixty-minute tape occur in this short segment. The other conversation on the tape with the highest frequency of slang occurs just after this when the male member of the couple who has just walked in is teased about getting his hair cut because of his pledge status in a fraternity. This leads to questions and comments about the feats of beer consumption which the pledges are expected to demonstrate.

A third exchange, with a moderate amount of slang, likewise has to do with partying. It takes place the next evening as Cindy gets ready for a fraternity party.

Female: What you doing tonight, Cindy, writing this paper?

Cindy: No, see, that's the deal. I've got a mixer tonight. And this guy that I'm

lusting with is going to be there.

Female: Who are you mixing with?

Cindy: Umm. Phi Kappa Sig. It's really small. They don't have a house. They're just a bunch of E-hogs.

Female: Let me think. We had a mixer with them one time. Them and one of the frats out on the golf course. We mixed..and it was in a--house. I'm pretty sure that's who it was. Are you excited?

Cindy: Yeah. It's a secret drink.

Female: Secret drink?

Cindy: Yeah. It's this drink they have concocted--it's like called a cruising something something, and the whole theme is like a spring break luau, and so it's like coconut and rum and all this stuff.

Female: That's nice.

Cindy: Yeah.

Female: So who's the guy you're madly--madly in love with?

Cindy: His name is X. And he's just so--

Female: Cute.

Cindy: --cute. He's got a great body, and so nice and he's funny. I mean just like every characteristic you could want, you guys.

Female: And a potential husband--more qualities of a potential husband.

Cindy: Definitely. I bet he fulfills all of them. Oh I'd like to find out some of them tonight.

Female: Oh great. You gonna jump him?

Cindy: Yeah. If I get over there and take a shower and stop looking like garbage.

In a session recorded in a dormitory lounge, a brief exchange between a male who has just come in from playing volleyball and the card players in the lounge shows how slang can contribute to the "verbal banter" which Moffatt found to be such a large part of undergraduate fun time.

Volleyball Player: You're not sweating like a big dog?

Female: I'm sweating.

Volleyball Player: Like a big dog?

Female: But I've got a flannel shirt on.

Volleyball Player: Like a little Chihuahua maybe?

Male 2: Irish setter?

But for the purposes of this study the most interesting feature of the two hours of talk recorded in two dormitory rooms in one residence hall and in the

floor lounge of another is the relative infrequency of slang, even in situations for which slang items are readily available. These are the only items I would classify as campus slang from the dormitory rooms tape: stranger mixer 'a party to bring together men and women who do not know each other'; whack out 'waste time'; awesome; bitch 'annoy, transitive verb'; dip [meaning unclear]; shotgun 'drink beer straight down'; cool; slack; out of control 'fantastic, excellent'; pissed off 'angry'; sweet; jump 'seduce'; lust with; E-hogs [meaning unclear]; Natty Bo 'Natural Bohemian beer'; major 'intense'. The following are from conversations during a series of card games in the floor lounge of a different residence hall: schlop [or schlock?]; awesome; neat; cool; hairy 'weird, intense'; like a big dog 'excessively'; this sucks; shitload; Rumptyvump 'Radio-Television-Motion Pictures'; wienie-head; sweet--a total of twenty-four, most of them occurring only once or twice. Even if the background noise and the distance from the microphone of some of the speakers prevented me from recognizing another dozen or so slang items, a total of less than fifty slang types and tokens in over two hours of conversation involving about a dozen participants seems low.

In two instances, the use of a slang expression required clarification for the participants. Both of these exchanges took place in the dormitory lounge with a television blaring in the background and the participants playing cards. The participants, except for Chad who was absent at the beginning, knew that Anne had a tape recorder running for a project about conversation for her English class.

Male 1: I'm gonna tell you something. You're gonna find--how's this schlop? [Possibly schlock.] That's all right. It's a good word.

Anne: What was that?

Male 1: Schlop.

Anne: What's a schlop?

Male 1: Well, I don't know. It's something that resembles a--

Male 2: It's low grade.

Male 1: Yeah, that's it.

Male 2: It's one of Tommy Jones' words. It started out with some schlop--schlop horror movies.

Male 1: Lemme just--umm

Male 2: As in extremely low grade.

Male 1: The way our conversation wanders, it's gonna be an interesting tape--especially with Chad.

During the second exchange, the females were playing

cards and the males were observing. One pair had just won a hand but was still 400 points down.

Male 1: That looks pretty hairy.

Female 1: No, harried. Not hairy.

Female 2: What's harried mean?

Male 2: Hurried.

Male 1: You get hairy, you get harried. Hah.

Female 1: You know--tired, worn out.

Male 1: Oh, well. That works.

Even in subject areas that have generated a large number of terms in college slang, the incidence of slang in the two hours of recorded talk is low. Because college slang abounds in negative evaluative terms, I had expected a high frequency of slang in talk reporting unhappy situations. Here, however, is one sample, between two female students.

A: How you doing? Studying?

B: I'm just getting my room back in order from my tirade this morning.

A: From your what?

B: From my tirade this morning.

A: Tirade?

B: Yeah, I started throwing stuff.

A: Why?

B: Pissed at ____ so.

A: Are you OK?

B: Yeah--OK. It's like my crate things like--no, not crates but you know how they stuck em--since, they're not crates--but they stuck em. You put stuff in em like this and I was like--yes--something like that but they're not as sturdy and they just, you know, like they sit in little slot things--and that--started to fall and I was flustered anyway by other things that were going on. Started to fall and I was trying--go like this--and they were leaning up against my knee. And I was trying go like this, and they you know, one kept falling inside the other--and everything--like that--I went and they just went--why? and everything. All over my room. So now I'm just like, now I'm just going through everything. Nothing is in the right place. So now I'm like taking this opportunity just to throw stuff out.

A: He he.

B: It's such a mess ---before I start in on any studying. So well anyway.

A: Anyway?

B: Anyway?

A: Does ____ know this?

B: Umm. We were going to have a study session. We started talking and we decided that we'd have like a major study session on Sunday afternoon.

A: That's awesome.

B: He's really good.

A: You have the awesomest study habits here.

This sample is highly colloquial, but only four words--pissed, major study session, awesome, and awesomest--might be considered college slang. Notice that the evaluative awesome and awesomest came only at the end with a change in topic.

A discussion about new record albums among three females is similarly lacking in slang, as is the following discussion [abridged] in the lounge between two males and Anne about an unattractive female--a concept which has spawned numerous slang equivalents, none of which are used here.

Male 1: Chad must have, Chad must have--the ugly girl must have been home. I can't imagine him talking--maybe--I can't imagine him talking to her that long.

Male 2: Why does he have to read it that poem? Why does he have to read that poem?

Male 1: It's this incredibly romantic poem, and the teacher's trying to be a matchmaker between the two. He's got to present it in class, and she's got to help him cause he didn't get ready.

Male 1: We'll ask him when he gets back if he had fun doing it with the ugly girl? That would be terrible.

Male 2: The unendowed.

Male 1: Huh? Unendowed?

Male 2: You left out unendowed.

Male 1: Yes. She is quite unendowed--she has no natural blessings, let's say.

Anne: Who is it you're talking about?

Male 1: This ugly girl Chad has to read a poem to.

Anne: What does he have to read a poem to?

Male 1: For his late drama class, or something. Maybe it's speech--one of the classes.

It is puzzling why the males didn't use a term like the currently popular dog, or maybe double bagger. Perhaps the presence of a female and the knowledge that the conversation was being recorded served as inhibitors.

An important factor governing the use of slang items in a particular conversation may well be

register. Michael Moffatt identifies at least three different peer-group speech styles used by undergraduates at Rutgers, which he calls "Undergraduate Cynical, typically spoken in the dorm lounges; Locker-room, typically spoken in all-male groups (and, to an increasing extent, in all-female groups); and Private-Sincere, typically spoken in rooms or in other private contexts to friends." (234) Undergraduate Cynical and Locker-room would seem the registers that would elicit slang, although the data reported in this paper do not support that in a strong way.

But the data do show an intimate way of talking, probably equivalent to Moffatt's Private-Sincere peer-group style, which does not rely on college slang. The following conversation between two females about a misunderstanding with a boyfriend lapses into slang only with the intrusion of a third person.

A: Are you going to be here?

B: We'll probably think about--or whatever.

A: Are you still fighting right now?

B: Like I was just mad at him--cause he just came at the wrong time.

A: Oh?

B: He like came unexpectedly, woke me up.

A: This morning?

B: Yes. And I was getting up early to study.

I had this stuff. I had a pop quiz, I had to finish my Spanish lab which I'm now not even finished and I'm getting a zero on.

A: Oh.

B: And just, I mean. And he knew that and he persisted in talking to me. I can't stand people who interfere with my privacy and my responsibilities.

[At this point another female voice chimes in, apparently on entering the room.]

C: Pictures!

[The supportive voice of the interrupted conversation responds.]

A: Awesome pictures.

Perhaps the lack of slang in the preceding segment is due to the register. The participants appear to know each other well and are willing to confide in and give comfort to each other. In this conversation, the group to which the speaker and the hearer belong is unimportant. They do not need to assure each other of their group identity but rather of their individual and personal loyalty. The aim of intimacy is the loss of affiliation with a group in favor of unity with another. Thus slang, which is social, is not the norm in the intimate register.

The sampling of student conversation on which this paper is based is surprisingly deficient in slang. Will additional data prove the sample atypical, or do college students not rely on their ever-changing slang vocabulary as readily as the size of the slang lexicon would suggest? Yet the sample does verify the essentially social function of slang: slang items occur most frequently in talk about group social activities and at the beginnings and ends of conversations and as feedback signals to keep a conversation going; slang is almost absent in the Private-Sincere style.

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BIMODAL COMMUNICATION
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Introduction. When a speaking individual learns to sign, he has access not only to another language, but to another mode of communication. There are several ways in which the visual and oral modes can interact. For example, the individual might use simultaneous communication, in which he attempts to communicate by signing and speaking the same information at the same time. The two modes might interact in a different way when an individual code-switches between them.

A third possible type of interaction is *bimodal communication* (BC). BC occurs when a person speaks (or mouths) and signs a given word or concept at the same time. It differs from simultaneous communication in two ways: 1) Only a few words or concepts might be bimodally communicated in an entire conversation. 2) BC to be done without conscious effort. The person using bimodal communication is not attempting to convey meaning in both sign and English. He is using only one of these methods intentionally. The individual accesses the other mode without conscious thought.

BC differs from code-switching primarily in that code-switching is a sequential phenomenon. The relation between these two phenomena will be discussed in greater detail later in this article.

The author is not aware of any prior research into the phenomenon of BC. Therefore, she distributed a survey to collect preliminary data in order to determine how extensive the phenomenon is, and what factors influence its production. Sixty four participants responded¹. A copy of the survey with a summary of the responses appears at the end of this article. The survey's introduction made clear that, unless otherwise specified, the type of signing an individual used did not matter for the purposes of this study.

Results. *BC is a common phenomenon.* 89% of the people surveyed reported that they have used BC. Only 3% of the people surveyed said that they have never used BC. The remaining 8% were not aware of whether or not they have used BC.

People gesture more after they learn to sign. Several interesting

¹My thanks to the faculty of the Sterck School, the Model Secondary School for the Deaf, the Kendall School, and to the people at the National Association of the Deaf, and in the University of Delaware's 'University Image Makers' who have participated in the survey, and to Robert J. Di Pietro for his constructive criticism.

results emerge. One result is that 63% of the people who were not native signers claim to gesture more now than they did before learning to sign. Another 13% were not sure. Only 23% of the non-native signers claim that they do not gesture more now. This result should not be surprising. In this society, children are told to keep still, and not to fidget. When such a child grows up and begins to learn sign, he often feels very self-conscious; even more so than when he learns to speak an oral foreign language. This excessive self-consciousness is probably the result of the negative censure he received in the past when he gestured. As an individual continues to sign, he begins to lose the self-conscious feeling. Signing is an affirmation that it is all right to use one's body to communicate. This affirmation transfers to his feelings about gesturing, and counteracts the effects of the previous censure. Therefore, he feels more comfortable with gesturing, and so begins to gesture more.

The more a person's signing is ASL-like²³, the less he tends to use BC. Tables 1 and 2, at the end of this article, indicate the result of questions nine and ten, as compared to questions sixteen through nineteen. There is a trend that the more one tends to sign in an ASL-like manner, or the more comfortable one feels doing so, the less one tends to use BC. A possible explanation for this correlation is that the people who use an English-like sign may be the people who, when they are signing, will use simultaneous communication. Therefore, they are accustomed to using the two modes at the same time; hence, they would be more likely to do so without conscious effort when communicating in a spoken language.

There is one exception to this correlation. The primary source from which the participants learned to sign had the greatest impact upon their answers to question sixteen. 86% of the individuals who learned to sign primarily from their parents answered 'never' or 'occasionally' to question sixteen. Contrast this result with the fact that 68% of the people who learned to sign primarily from their peers answered 'sometimes' or 'often' to the same question. About 45% of the people who learned to sign primarily from their teachers answered 'never' or 'occasionally' to question sixteen.

Furthermore, there seems to be a slight tendency for people whose sign is ASL-like to use BC less frequently when they are speaking with someone who doesn't understand sign than they do when communicating with someone who does. People whose sign is English-

²³There is a range of signing styles in America. On one end is American Sign Language (ASL), a language completely distinct from English. On the other end are a number of artificial Manually Coded English (MCE) systems, in which each sign represents an English morpheme, and the signs occur in English morpheme order. Pidgin Sign English (PSE) is the term used to describe all of the signing styles in between the two extremes.

²⁴Recall that people are evaluating their own signing abilities. An unfortunate consequence of this is that there may well be a lack of consistency in the evaluations.

like show no such tendency.

The greater one's ability to sign, the less one uses BC. This result could be simply another facet of the ones found above; because it is easier for a native speaker of English to learn to use an English-like sign, only the better signers will use ASL. Because all the participants in this survey claim to be at least average in their knowledge of English (and, indeed, they would have to be in order to read and understand the survey!), their ability to sign may be comparable to their degree of bilingualism. If their knowledge of English reflects their ability to communicate orally, then their signing ability would also reflect their degree of bimodalism. Table 3, at the end of this article, reports the results to question eleven, as compared to questions sixteen to nineteen. These results indicate that the better one signs, the less one uses BC. The two people who claim never to have used BC are both native signers who consider themselves to sign excellently.

There also seems to be a slight tendency for people who sign better than average to use BC less frequently when they are speaking with someone who doesn't understand sign than they do when speaking to someone who does. This tendency does not occur among people who don't sign as well.

People may tend to use BC more often when they have just switched modes. 38% of the participants responded 'true' to question fifteen. Only 22% answered 'false'. However, the remainder either did not answer the question, or answered that they did not know. As a result, there is insufficient evidence to say that people tend to use BC more often when they have just switched communication modes. However, one can say that, of the people who answered the question either 'true' or 'false,' there is such a tendency.

Comments from participants. There was a place on the survey for people to write any comments which they thought might be useful for this study. One individual commented that she not only communicates bimodally with signs, but also borrows ASL facial expressions for both yes-no questions and WH questions when she is speaking in English. This indicates that BC can occur not only with lexical items, but also with syntactic structures. Another person wrote, "Repeating conversation when not understood the first time often brings on an automatic bimodal expression." A different individual said that he finds himself using BC when the other conversant has "conversation delays," either because he is not a native speaker of English, or because he has some speech disability. Yet another, however, stated that his use of BC is not effected by whether or not the other conversant is a native English speaker. Nevertheless, these comments, and others not reported here, tend to indicate that people are at least somewhat aware of their use of BC for strategic purposes.

BC and Code-Switching. Different people have defined code-switching in different ways. Robert J. Di Pietro (1977) has given a very inclusive definition of code-switching: "[C]ode-switching is the use of more than one language by communicants in the execution of a speech act." BC would be a special instance of code-switching,

according to this definition.

Shana Poplack (1987), however, has a more restrictive definition of code-switching. She defines code-switches as, "multiword sequences, which remain lexically, syntactically, and morphologically unadapted to recipient language patterns." According to this definition, BC would rarely be considered code-switching, if only because BC rarely occurs in multiword (or multisign) sequences. Most often, it is an isolated word or sign which is communicated bimodally.

I define code-switching as a sequential transition from one language to another within a 'speech' act. (Speech is in quotes to emphasize that signing may constitute a 'speech' act, even though no speech is involved.) This definition completely separates BC, in which the two languages are used simultaneously, from code-switching.

For the purposes of this article, I shall ignore a distinction which would be crucial to make in further investigations of BC. Specifically, if someone uses BC on a given occasion, is he truly using two languages, or is he just using a sign gloss of an English word? This could be difficult to determine. For example, consider two individuals. Person A uses ASL, but never uses simultaneous communication. Person B knows no ASL, but does use simultaneous communication. A and B may on occasion produce similar 'speech' acts. However, only A could ever be considered to produce a code-switch. B would always stay within the realm of his spoken language. His signing would just be a visual gloss of his English.

Although BC and code-switching both involve the use of two languages for interpersonal communication, there are several differences between the two phenomena. People communicate less bimodally, but code-switch more, as they become more proficient in both languages. Only the more proficient bilinguals show a tendency to use BC less when the other conversant is not bilingual; and even this tendency only occurs when the matrix language is spoken. Code-switchers tend to be more sensitive to the bilingual abilities of the other conversant. As J.C.P. Auer (1984) has pointed out, "Bilingual conversationalists seem to monitor their partner's speech production very carefully for 'mistakes' or insecurities of 'grammar' and 'pronunciation'... and adapt their own language choice to the assessed bilingual abilities of the other." Because of all this, we see that BC does differ from code switching.

BC and the Din in the Head. Elizabeth Barber (1980) was the first person to recognize the "din in the head," a phenomenon which occurs to people learning another language. She describes her own experience with the din as "words, sounds, intonations, phrases, all swimming about in the voices of people I talked with. This din blocked out all other languages to a degree inversely proportional to how well I knew them...The sounds in my head became so intense after five days that I found myself chewing on them, like so much linguistic cud...But I had no control over what my subconscious fed into my 'chewer' each day."

BC presents certain similarities to the din in the head⁴. The frequency of occurrence of both phenomena diminishes as a person becomes more proficient in the second language. Both phenomena tend to occur after exposure to a sample of the other language. Both occur without conscious effort.

There are of course differences between the din and BC. The din occurs within an individual. The din is a completely involuntary phenomenon. The individual can not will the din to stop; however, it is possible to stop oneself from using BC, if only by sitting on one's hands.

Problems, Limitations, and Areas for Future Research. The research presented in this article is the result of a questionnaire. Therefore, it is heir to all of the frailties of such surveys. Because there were so few people in certain categories, it is impossible to make any but the most tentative judgments. (e.g. - only six people with a less than average knowledge of sign participated in the survey). Also, the accuracy of the results depends upon the accuracy of the answers to the questions. Further research needs to be conducted to determine whether the results in this survey reflect the actual usage of BC.

Other areas of further research would be to determine more precisely under what linguistic and social circumstances BC occurs, what types of things are communicated bimodally, and why.

Conclusion. Even if the specific results of this survey turn out to be inaccurate, one can at least be fairly certain that BC is a common phenomenon which merits further study.

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⁴ Although the term "din in the head" might seem to preclude the possibility of the phenomenon occurring with sign languages, new signers sometimes experience the same phenomenon with pictures of signers, instead of voices of speakers, "swimming about" in their head.

Survey Distributed and Responses

Total number of responses: 64

N.B. - The number of responses to each choice appears in parentheses following the choice. Some participants did not answer every question. Therefore, the totals for the answers below will sometimes be less than 64.

(A description of BC was given, along with a request to circle the most accurate answer for the participant, and an assurance that there are no right or wrong answers. At the end of the survey, there was a request for the participant to write in any additional information which he thought would be useful for the analysis.)

- 1) Sex: M (15) F (49)
- 2) Age: a) <18 (1) b) 18-25 (13) c) 25-35 (15) d) 35-45 (22)
e) >45 (13)
- 3) I am: a) hearing (45) b) hard of hearing (6) c) deaf (12)
- 4) I consider my first language to be:
a) ASL (8)
b) English (52)
c) I learned ASL and English at the same time (4)
d) other (please specify _____) (0)
- 5) I learned my first signed language when I was:
a) <8 (11) b) 8-16 (8) c) 16-30 (35) d) over 30 (9)
e) I am learning to sign (1)
- 6) I learned my first spoken language when I was:
a) <8 (62) b) 8-16 (2) c) 16-30 (0) d) over 30 (0)
e) I am learning to speak (0)
- 7) I was educated primarily:
a) in an oral school for the deaf (6)
b) in a manual school for the deaf (6)
c) in a hearing school (52)
d) other (please specify _____) (0)
- 8) I learned to sign primarily from:
a) my parents (7) b) my peers (25) c) my teachers (31)
d) other (please specify _____) (0)
- 9) I feel most comfortable signing:
a) a manually coded (signed) English (8)
b) an English-like pidgin (38)
c) an ASL-like pidgin (11)
d) ASL (6)

- 10) I sign most often in:
 - a) a manually coded English (8)
 - b) an English-like pidgin (41)
 - c) an ASL-like pidgin (9)
 - d) ASL (6)
- 11) I rate my knowledge of sign as:
 - a) minimal (2)
 - b) poor (4)
 - c) average (14)
 - d) good (26)
 - e) excellent (17)
- 12) I rate my knowledge of English as:
 - a) minimal (0)
 - b) poor (0)
 - c) average (1)
 - d) good (21)
 - e) excellent (42)
- 13) I gesture with my hands when I speak more than I did before I learned to sign:
 - a) true (34)
 - b) false (15)
 - c) don't know (9)
 - d) I learned to sign before, or at the same time that, I learned to speak (6)
- 14) I have communicated bimodally:
true (57) false (2) don't know (4)
- 15) I communicate bimodally more often when I have just switched modes of communication (i.e. - switched from signing to speaking, or vice versa):
true (24) false (14) don't know (23)
- 16) I communicate bimodally when I am signing and the person I am communicating with knows English:
 - a) never (4)
 - b) occasionally (13)
 - c) sometimes (25)
 - d) often (10)
 - e) don't know (11)
- 17) I communicate bimodally when I am signing and the person I am communicating with does not know English well or at all:
 - a) never (7)
 - b) occasionally (17)
 - c) sometimes (13)
 - d) often (14)
 - e) don't know (11)
- 18) I communicate bimodally when I am speaking and the person I am communicating with knows sign:
 - a) never (7)
 - b) occasionally (15)
 - c) sometimes (18)
 - d) often (15)
 - e) don't know (8)
- 19) I communicate bimodally when I am speaking and the person I am communicating with does not know sign well or at all:
 - a) never (8)
 - b) occasionally (17)
 - c) sometimes (17)
 - d) often (11)
 - e) don't know (10)

N.B. - Figures in all tables have been rounded to the nearest percent. Not every participant answered every question, so totals may not exactly equal 100%

Table 1: Question 9 vs. Questions 16-19

Type of signing with which participant feels most comfortable / response for specified question

Question 16:

	a	b	c	d	e
ASL	.17	.17	.17	.17	0
ASL-like PSE	.12	.12	.24	.24	.24
English-like PSE	.04	.23	.45	.13	.15
MCE	0	.25	.63	0	0

Question 17:

	a	b	c	d	e
ASL	.33	.33	0	0	.33
ASL-like PSE	.24	.18	.12	.12	.24
English-like PSE	.06	.30	.23	.26	.15
MCE	0	.13	.25	.38	.25

Question 18:

	a	b	c	d	e
ASL	.33	.17	.17	0	.33
ASL-like PSE	.18	.12	.24	.24	.24
English-like PSE	.09	.28	.30	.23	.09
MCE	0	.25	.25	.38	0

Question 19:

	a	b	c	d	e
ASL	.17	.33	0	.17	.33
ASL-like PSE	.18	.35	.18	.06	.24
English-like PSE	.11	.23	.30	.21	.13
MCE	0	.25	.25	.25	.13

Table 2: Question 10 vs. Questions 16-19

Type of signing which participant uses most often / response for specified question

Question 16:

	a	b	c	d	e
ASL	.34	.17	.17	.17	.17
ASL-like PSE	.13	.07	.34	.20	.27
English-like PSE	.04	.24	.41	.14	.14
MCE	0	.38	.50	0	.13

Question 17:

	a	b	c	d	e
ASL	.50	.33	0	0	.17
ASL-like PSE	.12	.26	.23	.21	.14
English-like PSE	0	.29	0	.29	.43
MCE	0	.13	.25	.50	.13

Question 18:

	a	b	c	d	e
ASL	.50	.17	.17	0	.17
ASL-like PSE	.20	.20	.13	.20	.27
English-like PSE	.08	.24	.33	.24	.08
MCE	0	.13	.25	.50	0

Question 19:

	a	b	c	d	e
ASL	.34	.34	0	.17	.17
ASL-like PSE	.20	.27	.20	.07	.27
English-like PSE	.10	.27	.29	.20	.12
MCE	.13	.25	.13	.25	.13

Table 3: Question 11 vs. Questions 16-19

Signing ability / response:

Question 16:

	a	b	c	d	e
Minimal	: 0	0	.50	.50	0
Poor	: 0	0	.75	.25	0
Average	: 0	.29	.14	.21	.36
Good	: 0	.23	.54	.15	.04
Excellent	: .24	.18	.29	.06	.24

Question 17:

	a	b	c	d	e
Minimal	: 0	.50	0	.50	0
Poor	: 0	0	0	.25	.75
Average	: 0	0	.29	.43	.29
Good	: .04	.38	.23	.23	.04
Excellent	: .35	.29	.18	0	.18

Question 18:

	a	b	c	d	e
Minimal	: 0	0	.50	.50	0
Poor	: 0	.50	.25	.25	0
Average	: 0	.07	.29	.36	.21
Good	: 0	.38	.31	.31	0
Excellent	: .41	.06	.24	.06	.24

Question 19:

	a	b	c	d	e
Minimal	: 0	0	.50	.50	0
Poor	: 0	.25	.50	.25	0
Average	: 0	.29	.43	.07	.21
Good	: .12	.35	.23	.19	.08
Excellent	: .29	.12	.12	.18	.29

GENDER DIFFERENCES IN LANGUAGE USE: THE ROLE OF THE ADDRESSEE

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Introduction

Our popular culture is filled with stereotypes as to perceived differences between the language of men and women. These stereotypes are ubiquitous and can be seen on TV, in movies, and are even found in the cartoons of otherwise supposedly cultured publications (see, for example, Kramer, 1974). Moreover, linguists, both traditional and more recent, have sometimes contributed to the perpetuation of such stereotyping. For example, Jespersen (1922), in a chapter devoted to "The Woman", suggests that women tend to use unfinished sentences, jump from topic to topic, and generally fail to observe the (masculine) norms for English. He asserts that not only do women have a more limited vocabulary than men, but in addition that they tend to speak faster and use more incomplete sentences than do men. Jespersen supports his claims both with literary citations in which women use "feminine" language and with some putative experimental evidence, remarkable for 1922, in which women are asserted to have a more impoverished lexicon than their male peers.

More recently, linguists interested in differences between men's and women's language use have produced a wealth of material dealing with such matters. One of the most influential early studies along these lines was Robin Lakoff's (1975) Language and woman's place, in which it was argued that women tend to use a variety of structures in a dramatically different manner from men. Among the linguistic factors favored by women Lakoff lists the following: (a) specialized vocabulary (e.g., sewing and color terms), (b) a rising intonation with declaratives, (c) more tag questions, and (d) more hedges. Other stereotypes include the claim that women talk more than men, use simpler structures (e.g., Jespersen, 1922, p. 251), and tend to be more conservative in both pronunciation and lexical selection.

One of Lakoff's major points is that women are socialized to use a particular kind of language, just as are men. However, her conclusions are based primarily on anecdotal and introspective evidence rather than on empirically established facts. Indeed, this is a flaw common to much of the earlier research dealing with differences in language use between men and women. As Dubois and Crouch (1975) point out in their critique of Lakoff's data and claims,

"Lakoff cuts herself off from a vast body of descriptive, experimental, and theoretical studies of English and from what was available on the actual use of English by women...She is thus forced into a position analogous to that of rediscovering Euclidean geometry by use of a forced stick" (p. 291).

Numerous sociolinguists have turned their attention to the issue of genderlects, often with conflicting results. For example, Dubois and Crouch found from recorded discussion sessions that men used more tag questions (33) than did women (none), quite in contrast to the stereotype. Fishman (1978) found in 12.7 hours of taped conversations that women used more hedges (87) than men (17), in accord with the stereotype. Zimmerman and West (1986) examined interruptions in same sex and opposite sex dyads and found that in same-sex dyads interruptions were evenly distributed among the parties, while in opposite-sex dyads, men interrupted far more than women (46 to 2). However, in an examination of taped tutorial sessions, Beattie (1981) found no differences in frequency or type of interruption between men and women.

These studies typically examined spontaneous speech in relatively casual situations, with a focus on observational data from naturalistic situations. However, such studies constitute a landmine of potential problems since a great many relevant factors are at least potentially confounded if they are not carefully controlled. For example, the influences of social context, age of participants, subject matter being discussed, relative differences in perceived power and authority of the participants, and doubtless a host of other factors can be expected to contribute to variations in language use. In fact, just such factors have been long recognized by sociolinguists in most other areas of research. As Brouwer, Gerritsen, and De Haan (1979) point out, sex differences in language naturally fall into two distinct categories, namely those which are inherent in the linguistic system itself, as when the Spanish speaking woman says soy alegre but the man says soy alegre "I am happy," and those based in language use, which are generally the ones subject to the most sociolinguistic variation. Accordingly, it is this latter class of variation which receives the most attention in studies of language differences between men and women.

While it is perhaps true that a great deal can be gleaned from our intuitions about language, this method of data acquisition appears to be less reliable when dealing with language use than when dealing with matters of the linguistic system. Even in the latter case, however, there is notorious lack of agreement as to the reliability of introspection (see, for example, Spencer 1973 for a classic example). Clearly, claims about language use based solely on introspection must be carefully assessed, since these can obviously suffer from our unconscious biases and prejudices. Indeed, much of Lakoff's work has been criticized for just this reason

(see Dubois & Crouch, 1975).

In order to deal with the objections raised against the use of introspective data and at the same time attempt to control for certain of the potentially confounding variables rampant in many of the studies based on spontaneous speech in naturalistic settings, an experiment was designed in which all subjects would be carrying out the same basic task, that of describing a short movie clip, under controlled conditions.

In particular, we wished to investigate whether the language of men and women differs along the dimensions of verbal quantity, grammatical complexity, tag questions, hedges, lexical emphasis, and rising intonation. Moreover, we wished to assess whether the sex of the addressee, to whom the speaker was describing the movie scene, was also related to the type of language used. Although our data base is relatively limited, the results of the study are nevertheless highly suggestive of not only what factors are involved in differences in language use, when these appear, but also of the kinds of methodological constraints which are needed in order to filter out inappropriate and confounding variables. Without such a filtering, results taken from sociolinguistic studies are often as culpable as those resulting from anecdotal or introspective studies.

The Experiment

The subjects for the experiment were eight undergraduate volunteers, four male and four female, whose ages ranged from 19 to 26 years. The stimulus material consisted of a seven minute scene from the movie "Adam's Rib", in which two lawyers, who happen to be husband and wife, are seen discussing a case and eventually quarrelling. This particular scene was chosen in an attempt to encourage subjects to become involved with the characters in the scene and to identify with them, thereby providing the basis for generating an involved description. Each subject saw the clip alone, without the experimenter present. When the scene was completed, the experimenter returned to the room, and the subject's task was to describe the scene in detail to the experimenter. Subjects were told to assume that the experimenter had not seen the film previously, and that as a consequence they should provide the most informative and detailed description possible, in order that the hearer would have a clear and detailed understanding of what had transpired in the scene. The oral descriptions were taped and later transcribed.

In order to investigate the potential role of the sex of the addressee, the subject pool was divided into the following four groups: (1) female subject - female experimenter (FF), (2) female subject - male experimenter (FM), (3) male subject - female experimenter (MF), and (4) male subject - male experimenter (MM). There were two subjects in each dyad. The two experimenters were of approximately the same age. They encouraged the subjects

TABLE 1. PRIMARY DATA

VARIABLE	SUBJECT							
	FF	FF	FM	FM	MF	MF	MM	MM
	1	2	3	4	5	6	7	8
Words	361	901	484	254	643	247	333	454
Clauses	41	87	54	32	70	35	45	57
Main	35	83	51	26	62	32	36	51
Subord.	6	4	3	6	8	3	9	6
Hedges	4	10	4	2	16	6	2	7
Pauses	30	34	53	16	77	34	42	25
Rising Int.	2	3	5	4	0	5	1	0
Emp. Words	8	1	6	0	0	0	9	2

through eye contact and through the use of appropriate feedback to speak at length. Upon completing the oral description, each subject was asked if that description would have differed in any way if the experimenter had been of the opposite sex and/or had been much older. These questions were included in order to discover whether the subjects were conscious of any adjustments they might make in their language as a function of the sex or age of the addressee. Subjects were also asked to offer their perceptions of the relationship between the two characters in the film clip, thereby providing additional discourse data for analysis.

The eight descriptions, plus the post-description comments, were carefully transcribed in conventional orthography, including all hesitations, false starts, pauses, emphasized words, and the like. Each protocol was then analyzed in terms of the number of words, clauses (both main and subordinate), hedges, pauses, emphasized words, and rising intonations. The raw scores for these variables are found in Table 1.

From the average values in Table 2, certain tendencies are immediately obvious, and these invite statistical testing. For instance, it would appear that there is a tendency for both women and men to talk more to a female experimenter than to a male one, although this is more pronounced in female subjects than in male subjects. This factor shows up in both the total number of words under each condition and in the corresponding number of clauses, both main and subordinate. It also seems that both females and males use more hedges when talking to women than to men, and at the same time it would appear that men use more hedges in general than women, contrary to what the literature has suggested. Other similar trends can be discerned in the data.

TABLE 2. AVERAGE VALUES FOR EACH CONDITION

VARIABLE	CONDITION					
	FF	FM	AVE	MF	MM	AVE
Words	631.0	369.0	500.0	445.0	393.5	419.3
Clauses	64.0	43.0	53.5	52.5	51.0	51.8
Main	59.0	38.5	48.8	47.0	43.5	45.3
Subord.	5.0	4.5	4.8	5.5	7.5	6.5
Hedges	7.0	3.0	5.0	11.0	4.5	7.8
Pauses	32.0	34.5	33.3	55.5	33.5	44.5
Rising Int.	2.5	4.5	3.5	2.5	.5	1.5
Emp. Words	4.5	3.0	3.8	0	5.5	2.3

In order to assess apparent tendencies, each factor was tested statistically. The results reflect directly on various claims which have been made in the literature. It is to a discussion of these results that we now turn.

Results

Before turning our attention to the factors represented in Tables 1 and 2, we should first deal with some commonly held stereotypes. It turned out that a number of putative differences between men's and women's language were simply absent in the our data. For example, tag questions, which have been labelled as a part of "women's language" by Lakoff (1975), but which have also been found to characterize men's speech (Dubois & Crouch, 1975), simply do not appear in these data. The reason is probably that the present task requires a narrative production rather than involving a real exchange, in which turn-taking is important. Therefore, the strong claim that this structure characterizes either men's or women's language must clearly be tempered and restricted to certain types of discourse rather than being treated as a global phenomenon. Moreover, an analysis of the rate of speech and of particular phonological distinctions, such as extended long vowels, revealed no differences between males and females. Both spoke at approximately the same rate and none employed exaggerated phonology.

It has also been suggested (Anshen, 1974) that men tend to use profanity more than women. Only two subjects here, both males, used any profanity, and it was quite mild. But, contrary to what Anshen predicts, the addressee was in one instance male and in the other female. Finally, an analysis of the types of lexical items used revealed no special "male" or "female" vocabulary, as Jespersen (1922) and Lakoff (1975) would have predicted. Again, the reason might be that all the subjects were engaged in a relatively

neutral and non-interactive task, that of telling a story. Under different conditions, one might find special gender-related lexical items, but they did not appear here.

We now turn to an analysis of the tendencies which do appear in the data, with an eye toward testing for differences between male and female speakers, especially in light of any effect caused by the sex of the addressee.

Two of the most common stereotypes about female language are that women talk more than men and use less complex structures. The first of these seems borne out by the raw figures, but a *t*-test reveals that there is no statistically significant difference between the number of words used by men and women in this task. It also appears from the raw data that women tend to use more words when talking to other women (631) than when talking to men (369), a tendency not reflected so dramatically in the speech of men to women (445) versus men to men (393.5). However, a *t*-test reveals that these numbers, although suggestive, are in fact not statistically significant. In fact, there is no significant difference in the number of words used by men and women in this task, regardless of the sex of the addressee. Similarly, there is no significant difference in either the number of main or subordinate clauses for men versus women, again regardless of the sex of the addressee. Thus, these data support neither stereotype.

Turning to phonological factors, we find that women tend to use a rising intonation on declaratives more often than men, but again this difference is not statistically significant. Nor is there any effect in terms of the sex of the addressee. Likewise, even though women use twice as many emphatic words as men, there is no statistically significant difference between the two groups, nor is there any effect caused by the sex of the addressee.

Although many researchers have found that women use more hedges in their speech than men, the present study found that men in fact used significantly more hedges than women ($t(3) = 6.7$, $p < .001$). More importantly, however, the data reveal that women and men both used more hedges when speaking to women (a total of 36) than when speaking to men (15). A *t*-test reveals that this difference is highly significant ($t(3) = 7.7$, $p < .001$), suggesting that the sex of the addressee is quite important. When we turn to an analysis of the number of pauses, we find no significant differences between men's and women's narratives. However, once again the sex of the addressee induces a difference such that all subjects, regardless of sex, tend to pause more often when speaking to women than to men ($t(3) = 11.1$, $p < .001$). It appears, then, that the sex of the addressee can play an important role in certain of the types of language used by both men and women.

Conclusions

Our results have indicated that, at least within the context of the task under discussion here, there are virtually no significant differences between men's and women's language use, as evaluated against the major factors found in Tables 1 and 2. That is, when producing narratives designed to communicate the content of a story to a neutral hearer, men and women do not differ in terms of how much they talk or the kinds of structures they use. The only area where a significant difference between men's and women's language emerged in our study was in the number of pauses used. Yet it was the men who were more hesitant, if the number of pauses can be viewed as a true indication of hesitation. This result flies in the face of some stereotypic notions as well as of other empirical evidence.

Far more important, however, than the demonstration that many of the widely held stereotypes concerning the differences between men's and women's language are false, is the positive demonstration that the sex of the addressee can influence both women and men in the same direction. In particular, when speaking to women, our subjects tended to hedge more and pause more than when speaking to men. Is this because we perceive that women are more demanding of our language and that we accordingly try harder to be more precise when speaking to them? If so, this would support yet another stereotype, namely that it is the females who are more "precise" and conservative with the language. Or is it the case that both women and men try to facilitate women's comprehension more than men's by attempting to speak slowly? Of course, neither of these may be the reason, or both may be. The solution to this question is not immediately obvious but it does clearly invite more research.

Finally, it should be recognized that the present study should be recognized as preliminary, since the data base is relatively small. It might, for example, be the case that when more subjects are tested under each condition, some of the tendencies noted above will struggle toward, and even attain, statistical significance. The project continues, with further research clearly still needed. However, the one striking factor which has emerged here, and which constitutes the major contribution of this paper, is that the sex of the hearer does play an important role in our language use. Moreover, both men and women seem to behave in the same way in that both treat the female and male addressees differently.

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IX

HISTORICAL STUDIES

NATURAL GENDER VS. GRAMMATICAL GENDER IN OLD ENGLISH

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For a good part of the Old English period the gender system was changing over from grammatical to natural gender, although the change-over was not completed during this time period. This position does not agree with the views found in the literature. There, it is argued that the change-over began in Late Old English with the occurrence of only a few instances (often attributed to the ubiquitous scribal error) but was not completed until sometime in the Middle English period. It is further argued that grammatical gender pertained for all nouns, and that any correlation between noun gender and actual sex of the noun referent was coincidental and irrelevant (cf. Mitchell, 1985, I, 29-35, for a detailed discussion of Old English gender; Cassidy and Ringler, 1971, 35; Marquardt and Rosier, 1972, 13-14). It is also claimed that all compound nouns take the gender of the last word of the compound.

1a) lampytt m. loampit < pytt m. pit

b) sandgrot n. particle < grot n. bran, meal

The gender system in Old English was inherited from PrGmc and IE. This was an artificial and arbitrary grammatical device, the function of which was to indicate the concordance or correspondence between personal and relative pronouns and an antecedent noun, and between adjectives and demonstrative pronouns and the noun each modified. There was no relationship between the actual sex (male and female) or absence of sex (asexual) of the noun referent. The competing natural gender system, however, was based on actual sex or absence of sex of the noun referent. Here also, the function was the same: to define and delineate the relationships between personal, demonstrative, and relative pronouns and adjectives with their noun antecedents or the nouns they modify.

The research reported here shows that Old English nouns, regardless of declension membership, can be organized into three gender classes: 1) nouns showing grammatical gender whose referents are ideas, things, some few people and animals, and plants; 2) nouns showing natural gender whose referents are human beings and animals; and 3) nouns showing alternating gender whose referents are people, animals, ideas, plants, and things, real and abstract. The nominals in this third class come from the group of nouns with inherited grammatical gender. There are no linguistic indicators for gender associated with the noun or adjective forms themselves because their roots and inflections carry no gender cues. The forms are often nondistinctive,

occurring in all gender paradigms of all noun and adjective classes. The result is that the inflections were no more indicative of gender than they were of case (Collins, 1979). Gender in Old English could be determined only if an adjective or a demonstrative, personal, or relative pronoun was included in the text to give gender--I put no faith in "racial memory" to ensure continuance of the inherited system. However, tradition could play a significant role in gender retention to the extent that intergenerational differences in perception permit. Gender would be unknown in Old English if there were not these extra-nominal cues.

Noun Categories:

Three kinds of nominals occur in Old English: 1) simple and compound nouns maintaining the inherited grammatical gender assignments--these nouns will not be discussed as they are unaffected in the gender change-over; 2) simple and compound nouns derived from verbs, other nouns, adjectives, acronyms, and foreign words, which show a mixture of grammatical gender and natural gender markings; and 3) simple and compound nouns having natural gender (animals and human beings, as well as concrete and abstract things).

Grammatical Gender:

Grammatical gender is defined as gender based on language factors only, and these factors are unrelated to sex or absence of sex of the noun referent. Grammatical gender is indicated by the gender shown in the associated pronoun and adjectival forms (masculine, feminine, or neuter) regardless of natural gender. The meanings of nouns in this system in no way indicate gender as they do with those nouns in the natural gender system.

The evidence indicates that grammatical gender was a dying system during Old English, but even dying systems can function somewhat. A case in point is a made-up word derived from the acronym ABC, which was given feminine gender, apparently because of its seeming relationship to other feminine abstract nouns (cf. Collins 1987, 1988, for a discussion of the innovative processes involved). The word given here is the Old English version of MnE NATO; few, today, remember what the acronym means.

2) abecede f. ABCD, the alphabet > MnE ABCs

Natural Gender:

Natural gender is defined as gender based on the actual sex or absence of sex of the noun referent. The nouns included in this class consist of any noun representing the male or female of the animal kingdom, including human beings. Only natural gender, based on actual sex, is pertinent. The adjective and pronoun forms used with these nouns were also chosen according to the actual sex of the referent. The noun meanings themselves also indicated the real sex.

3a) bucca m. buck, male deer

b) da f. female deer

When an adjective, demonstrative, personal, or relative (demonstrative + þe) pronoun was used, it replicated the natural gender of the referent. However, not all adjectival and

pronominal forms could indicate gender because the same case form could represent multiple cases and numbers.

Three separate types of nouns are included in this class: 1) those nouns that always refer to people and animals; 2) group nouns referring to males and females but with no sex distinction semantically; and 3) those nouns referring to people and animals that are derived from neuter nouns representing occupations, things, or ideas, or from verbs or adjectives.

Group nouns, which easily could be called 'generic' in meaning because they do not distinguish the individual sexes but include both in the meaning, carry masculine gender.

- 4a) paeca m. deceiver
- b) manswara m. perjurer
- c) handdaeda m. doer with own hands

In those nouns derived from verbs, adjectives, and foreign words, as well as those made-up nouns derived from acronyms, there was no inherited gender. Gender had to be assigned by the speaker. If the noun came from a foreign language and referred to a human being, animal, or thing, gender was assigned according to natural gender.

- 5a) olfend, -a m., -e f. camel < Latin elephantum
- b) abbod m., -esse f. abbot, abbess < Latin abbas
- c) mytrestre f. prostitute < Latin meretricem
- d) adfini n. limit < Latin ad infinitum

In either simple nouns or compound nouns whose donor element was an adjective (thereby having no gender in itself other than that of whatever noun it modifies--a linguistic Catch-22 situation), gender could be assigned in two ways: if the referent was a thing, neuter would usually be assigned, but masculine or feminine if the referent was human. Even the gender of the initial word of the compound could be used, as in 5c.

- 6a) daegred n. dawn < read adj. red
- b) niehsta mf. closest friend < niehst adj. next, nearest
- c) handful nf. handfull < ful(1) adj. full, filled
- d) adloma m. one crippled by fire < lama adj. lame
- e) haeden m. heathen < haeden adj. pagan, heathen

If the donor word in a compound base was derived from a verb, then gender was assigned according to natural gender.

7) feaxfang n. seizing or dragging by hair < fon vb. to seize
However, grammatical gender could be assigned if it was desired because the two gender systems were in competition.

- 8) acwellednes f. slaughter < acwellan vb. to kill, destroy

In derivative simple and compound nouns grammatical gender of the donor noun was irrelevant. New nouns were given natural gender according to their actual sex. It is this group of nouns that clearly shows the shift to natural gender from grammatical gender.

- 9a) +beor m. pot companion, guest < beor n. beer, mead
- b) ancorsetla m. hermit < ancorsetl n. hermitage (setl n.)
- c) saedere m. sower < saed n. seed
- d) saetere m. waylayer, robber, spy < +saete n. snare, ambush

Nouns derived from verbs also assume the gender of the actual sex

of the noun referent.

- 10a) brytnere m. steward < brytnian vb. to distribute, dispense
- b) hoppester f. female dancer < hoppetan vb. to hop, to leap
- c) handgeswing n. blow, stroke < swingan to hit, to strike

The gender assigned to a noun with a specific meaning restricted to one sex or the other of an animal matched the actual sex of that animal referent.

- 11a) brymwylf f. she-wolf of the sea
- b) hind f. female deer
- c) bucca m. male deer, buck
- d) da f. doe
- e) assmyre f. she-ass) < mearh m. horse
- f) olfendmyre f. she-camel)

Other instances of seeming gender alternation occur with certain paired nouns referring to animals and people. Such is not the case, however. Because the only difference in the meanings between the paired nouns is one of sexual difference, these nouns have separate masculine and feminine forms which match the actual sex of the referent. Alternation does not occur at all. This group is a subgroup of 10 above.

- 12a) casere m., -n f. emperor or empress
- b) olfend, -a m., -e f. male or female camel
- c) catt m., -e f. male or female cat
- d) fidelere m., -estre f. male or female fiddler
- e) husbonda m., -e f. master of the house or mistress
- f) nefa m., -ene f. nephew or niece
- g) fox m. fox, fyxe f. she-fox, vixen

Alternating Gender:

Alternating gender is just that. No consistent, single, gender marker is associated with a nominal, but first one, then another. Nouns from all the noun declensions show alternating gender. It occurs with both simple and compound nouns. A noun can be associated with masculine/feminine, masculine/neuter, feminine/neuter, or masculine/feminine/neuter adjectival or pronominal forms. However, regardless of the gender associated with these nouns, the meaning always remains the same. It seems as if there is confusion as to which gender to use and which system to follow, so all possibilities are tried. This also supports the idea of a dying grammatical gender system being replaced by the incoming natural gender system.

- 13a) aerist mfn. rising, resurrection
- b) aet mfn. eatables, food
- c) durh fmn. pipe, trough, coffin

Alternating gender also arose when a noun belonging to one declension was assigned to another declension, either by analogy or in a move to natural gender, as in

- 14a) cealf mn. calf (original n., az-, iz-declension)
- b) oxencealf n. oxcalf (maintaining original declension)
- c) +cynd nf. nature (original f., o-declension)

Although compound nouns are reported in the literature to take the gender of the donor word which forms the last word of the compound, analysis does not support this statement. Multiple

examples occur in the texts which show a gender mismatch between a donor word and the same word in a compound.

- 15a) acmistel f. mistletoe < mistel m. mistletoe
- b) dimhof m., -e f. place of concealment < hof n. enclosure
- c) saedeor m. sea monster < deor n. wild animal, deer

Other instances of seeming gender alternation, on analysis, are found not to be alternation at all. Here, multiple meanings are associated with each noun. Analysis reveals that each meaning is associated with a specific gender determined according to natural gender, as, for instance, in the examples given below where feminine occurs with human beings and living plants, while neuter occurs with concrete and abstract things.

- 16a) aewe fn. married people, married woman; lawful, born of same marriage, married
- b) boc fn. beech tree; book, deed
- c) wiht nf. aught, anything; wight, creature, being

Tendency toward Natural Gender:

There is a large number of nouns which are definitely moving toward natural gender. If the meaning of the compound changed from the donor meaning and had a human or animal referent, the compounds took the sexual gender of the referent. The same applies to asexual nouns.

- 17a) forliger f. fornicatress, adulteress)
- b) forliger m. whoremonger) < ligere n. fornication
- c) forlegis f. prostitute, adulteress)
- d) cornappla n. pomegranates < aeppla m. any fruit, apple
- e) aepfelscreada n. apple-paring < scread(e) f. shread, scrap
- f) searoceap n. artistic object < ceap m. cattle, goods
- g) +landa m. compatriot < land n. land
- h) saedeor m. sea monster < deor n. wild animal, deer

It is not unusual for two different gender markers to be associated with the same noun in various OE texts. In one instance natural gender prevails, while in another, culture lag does and the gender marker belongs to the grammatical gender system.

- 18a) cederbeam mn. < beam m. tree
- b) aetgaere n., -gar m. dart, spear < gar m. spear, dart
- c) beodsceat n., -e m. table-napkin < sceata m. napkin
- d) dunwang fn. temple (of the head) < wang m. plain, meadow
- e) healsed mn. neck of tunic, headcloth < heals m. neck
- f) hatheort n., -e f. anger, rage < heorte f. heart, spirit

False Alternation:

False alternation is defined as alternation within one gender system and not alternation between gender systems. Certain nouns exhibit what appears to be gender alternation. These are all concrete and abstract asexual compound nouns which also all show grammatical gender. Analysis shows that gender alternation of these nouns is that of alternation within one system and not alternation of grammatical gender with natural gender. Some show a tendency toward natural gender (17d,e,g,h), while others reveal ambivalence (17a,b,c,d,k,l,m,n). The motivating factor seems to be a change from the generic meaning of

the donor word to a specific limited variation of the generic meaning in the derivative compound.

- 19a) bealoclomm mf. oppressive bond < clomm m. bond, fetter
- b) fotlast mf. footprint, spoor, foot < last m. footprint
- c) geancyrr m., -cyrnes f. return, gainchare < cierr m. turn, chare
- d) sciptearo, -ter n., -a m. shiptar < tearu m. tar, bitumen
- e) tidsang mn. canonical hours, Lauds < sang m. noise, song
- f) biwist fm. food, a meal < wist f. provisions, food
- g) efenniht f., -e n. equinox < niht f. night
- h) heregeatu fn. war gear or equipment < geatwe f. equipment
- i) ceodel n., -u f. deck of ship < del n. board, plank
- j) goldleaf n., -fer f. gold plate < leaf n. sheet of paper
- k) helledor n., -u f. gate of hell < dor n. door, gate
- l) hungergear mn. famine year < gear n. year
- m) midhrif nm. midriff, bowels < hrif n. belly
- n) ungewidere n., -rung f. bad weather < +widere n. weather

System Confusion:

Certain compound nouns show gender confusion within the grammatical gender system. Some meanings change from generic meaning of the donor word to a specific variation of the donor meaning, while with others the meaning remains the same. Why the gender of this group of nouns should be changed from the more appropriate gender of the donor word can only be ascribed to confusion as to which gender to use and which system to operate within.

- 20a) haligdomhus m. 'sacrarium' < hus n. house
- b) legerwite fm. fine for unlawful cohabitation < wite n. fine
- c) aelmeslond m. almsland < land n. land
- d) acmistel f. mistletoe < mistel m. mistletoe

Another group of compound nouns with related meanings show gender alternation within one system also. Here, the alternation occurs in the derived compound nouns where the meaning is a specific variation of the generic donor meaning.

- 21a) acrind f. oakbark)
aescrind f. ash-tree bark)
aesprind aspen-tree bark) < rind f. rind, crust
apuldorind f. apple-tree bark)
alorrind m. alderbark)
- b) firstmearc fm. appointed time) < mearc f. mark, sign
onmearca m., -ung f. inscription)
- c) waeterclad m. towel)
hedecclad m. coarse thick upper garment)
beodclad m. tablecloth, carpet) < clad m. cloth
handclad n. towel)
heafodclad n. headcloth)

The next two groups of nouns also show gender confusion. They are most interesting because there is no meaning change involved between the donor word and the resulting compound. Their meanings are identical.

- 22a) formael fn. agreement, treaty < mal n. (same meaning)
- b) forspild m., -nes f. destruction < spild m. (same meaning)

- c) ungelimp nm. misfortune, mishap < +limp n. (same meaning)
- d) wealhmoru f., -a m. carrot, parsnip < moru f. (same meaning)
- e) weggelaete fn. junction of roads < +laete n. (same meaning)

The ultimate in confusion is found in the group of simple nouns where two separate forms, each maintaining the same identical meaning, each show an alternation of two genders with no meaning change. No reason for this has been ascertained.

- 23a) hilt mn., hilte fn. sword hilt, handle

- b) frid mn., fride fm. peace, security

One last gender alteration has been noted. It is gender alternation based on religious factors. The Christian God is set apart from the heathen god by gender. However, for the most part only context distinguishes one from the other as the singular case inflections for the a-stem masculine and neuter nouns are the same. What differences there are between masculine and neuter forms occur only in the plural, and many of the adjectival and pronoun forms are indistinguishable. The derivative compound dwolgod also shows the confusion.

- 24a) dwolgod mn. false god < (god m. Christian God
(god n. heathen god)

The nouns investigated in this study were all taken from J. R. Clark Hall's A Concise Anglo-Saxon Dictionary (1984) and the Bosworth-Toller An Anglo-Saxon Dictionary (1898). A total of 15,297 nouns by actual count were analyzed (see Table I for details). Each noun entry was classified according to the gender marking of the noun and natural gender of the referent: 1) masculine and feminine markings with male and female referents; 2) neuter markings with asexual referents; 3) neuter markings with male and female referents; and 4) masculine and feminine markings with asexual referents. Nouns having masculine and feminine gender markings with asexual referents are judged to have grammatical gender. The same judgment applies to nouns having neuter gender marking with male and female referents (78 in number). Nouns with masculine and feminine markings matching the sex of the referents are considered to have natural gender.

Table II identifies the number of nouns with alternating gender (masculine/feminine, masculine/neuter, feminine/neuter, masculine/feminine/neuter). The Table also clearly shows that the controlling system is that of natural gender for nouns having sexual referents. The numbers support this conclusion. 2048 nouns had matching masculine or feminine gender markings. Only 78 out of a total of 15,297 nouns show neuter markings for male and female referents--the inherited grammatical gender pattern. These nouns were of such high frequency in use that they were less vulnerable to change than nouns with less frequency of use. However, 2945 nouns had neuter markings for asexual referents--obviously following the natural gender system.

Gender alternation clearly shows that there is a stronger push for natural gender than the literature recognizes. Gender for nouns with sexual referents has almost totally gone over to natural gender (see Tables I and II for a documentation of these trends).

TABLE I

Gender Marking according to Grammatical or Natural Gender

	#	%
Total number of nouns in study.....	15297	= 100
1) Masculine or feminine gender marking for asexual referents (grammatical gender).....	9601	= 63
Gender marking matching natural gender of referent.....	5071	= 33
Mixed gender marking for both sexual and asexual referents.....	625	= 4
Total masculine, feminine, and neuter gender markers for only sexual referents.....	2126	= 14
2) Masculine or feminine gender marking matching sex of referent.....	2048	= 13
Neuter gender marking for sexual referent.....	78	= 1
3) Neuter gender marking matching asexual referent.....	2945	= 19
4) Mixed gender marking for both sexual and asexual referents.....	625	= 4

TABLE II

GENDER ALTERNATION

	#	%	#	%
Total Number of Nouns showing Mixed Gender.....	625	= 100		
1) Feminine/neuter gender alternation.....	108	= 17		
Number with sexual referents.....	2	= 2		
Number with asexual referents.....	106	= 98		
2) Masculine/feminine gender alternation.....	302	= 48		
Number with sexual referents.....	98	= 32		
Number with asexual referents.....	204	= 68		
3) Masculine/neuter gender alternation.....	160	= 26		
Number with sexual referents.....	7	= 4		
Number with asexual referents.....	153	= 96		
4) Masculine/feminine/neuter gender alternation.....	53	= 9		
Number with sexual referents.....	1	= 2		
Number with asexual referents.....	52	= 98		

Conclusions:

Although the literature argues that the Old English gender system is one of grammatical gender, this research has demonstrated that the natural gender system in Old English is replacing the inherited system. The switching-over to natural gender is supported by the fact that all male and female nouns have matching gender with a very few exceptions of the few neuter nouns inherited from PrGmc, such as wif, cild, maegden and bearn, and compounds in which these nouns form the final member. The frequency of use of these nouns was high enough to maintain the original gender in both the original word and in any compound it was a part of. The correlation between sex and gender is not happenstance as is argued in the literature. Matching natural gender was deliberately assigned.

Three noun categories exist in Old English: 1) inherited nouns with asexual referents but with masculine and feminine gender markings, 2) derived nouns with alternating gender, and 3) nouns referring to human beings and animals which have matching natural gender. The kinds of nouns showing the changeover to natural gender are those derived from occupations or things, which donor words have grammatical gender, while the new noun has natural gender matching the sex of its referent. Some nouns with asexual referents occur with neuter marking of natural gender as well as with masculine and feminine marking of grammatical gender---instances of the natural gender system replacing the grammatical gender system. The existence of 1) simple compound nouns with an assigned gender which differs from the gender of the donor noun (claimed in the literature to not occur) but which matches the gender of the referent; 2) simple and compound nouns derived from donor verbs and adjectives, neither of which has an associated gender, being assigned natural gender according to the referent; 3) nouns with meanings which are restricted to one sex or the other and which gender matches this sex; 4) group nouns referring to both males and females without sex distinction carrying masculine gender; and 5) paired nouns using the same root but having a separate set of inflections for each sex of the referent, all together combine to reinforce the heavy presence of natural gender in Old English.

Gender alternation involving nouns having both natural and grammatical gender clearly reveals the confusion about which system to follow. Such pairs as saedeor f. sea monster and heahdeor n. stag, both derived from deor n. wild animal, deer and others support the argument that the confusion results from a population that did not know the original system well and was "making do" with what sounded right. The group of nouns showing the greatest vulnerability, which the very fact of alternation points out, concerns nouns with asexual referents but grammatical gender of masculine and feminine. The alternation between natural and grammatical gender involving the same noun is not surprising. Language change does not differ from change in other cultural artifacts in that the original form continues for a time to exist side-by-side with the new form. Eventually one

form becomes dominant and replaces the other, and it is not always the new form that does this. Sometimes the old form regains its dominance and eliminates the new one.

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RESHUFFLING OF "RELIC" ENGLISH PARADIGMS THROUGH PHONOSYMBOLISM

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Historical linguistics has chronicled the roles of both sound change and analogy in affecting paradigms. Socio-linguistics has demonstrated the powerful effects of gender, ethnos, situation, topic, class, etc. upon choices among linguistic variants. There remains, at least, another force at work: phono-symbolism.

For the purpose of this discussion, phono-symbolism's role in morphology will be impressionistically, not rigorously, defined. Diachronically unsophisticated speakers of a language, the majority, make associations in language as well as in other areas of cultural behavior. That is, speakers associate similar phonological elements or sequences which signal similar senses whether the words share common or unrelated origins.

There are many well-known examples of such associations in the general vocabulary. The Anglo-Saxon association of "igland" with "ealand," later M.E. "iland" with "isle" for "island" is one example. The association of "rime" with "rhythm" for "rhyme" is another. "Algorism" with "mathematics" and "arithmetic" for "algorithm" is a third. Such examples are legion, so I will non continue them.

For several years, morphological and phonological relations among certain English words interested me: Hoffman, 1974, 1975, and 1985. Their inventory includes words of both high and low frequency among which are function words and relic paradigms. Their origin is primarily, though not exclusively, native as well as naturalized from both Germanic and Romance languages.

I gradually became aware of the role that phono-symbolism might play in reshaping morphology: Hoffman, 1982: 221-2. Concern with phono-symbolism is hardly new. Two noteworthy earlier discussions were Bloomfield, 1933: 245, and Markel and Hamp, 1961.

I suspect that certain earlier investigators' analyses--in which phono-symbolism ostensibly played no role--reflected effects of phono-symbolism upon morphology. These investigators were primarily concerned with a synchronic rather than diachronic approach to analyses of English morphology. Hill, 1958: 145-150: 154-165 and 370 made several analyses which I suspect reflected effects of phono-symbolism. Others were Trager, 1967 and 1972: 54 and 76-81 as well as several unpublished works of Smith, 1967.

Several works drew my attention to the possibility of phonosymbolism being a major factor in restructuring morphology. They included: Malkiel, 1978; Tyma, 1978 and 1979; and Westcott, 1976 and 1979. This led to some preliminary analyses presented in Hoffman, 1987 from which figures, subsequently revised for this presentation, follow.

The following figures reflect analyses based upon principles of Aspectual Linguistics, both in Phonology and Morphology. Even a brief treatment of either is beyond the scope of this presentation. I will limit remarks to just enough information to make the figures, which are to follow, intelligible.

The morphophone, here represented by the convention of a following period, is a phonological cover symbol. It may loosely be identified with the morphon, the systematic phoneme, or even the morphophoneme of earlier phonological terminology. Phonemic expressions, which differ among dialects, may--in most cases--be represented invariantly at the morphophone level. This does not mean that every word in the English lexicon has a single morphophonemic representation. For example, "vase" v.ey.s./v.a.z. and "either" iy.ð.r./ay.ð.r. are cases where alternatives may be chosen within a single dialect.

Brief discussions of morphophone theory occur in Hoffman, 1976 and 1979. Exhaustive treatments are available in Smith, 1967 and 1972. One remark on phonology remains necessary. The theory holds that there is no phonemic zero but that there is a morphophonemic zero: Ø.

Turning to morphology, Aspectual analysis differs from other treatments in many ways. However, only one difference is relevant to this presentation. Many relic forms are considered to be stems made up of three morphemes. They include a prefix and a postfix, each composed respectively of one or more consonant morphophones. These surround a bound base made up of a single vowel morphophone termed: a kernal vocalic.

For example, the word "that" is considered tri-morphemic. Its prefix ð.- is shared with "the," "this," "these," and "those." and its postfix -t. is shared with "what" and "it." The -æ.- which remains is the kernal vocalic. In some cases, such tri-morphemic stems can add derivational, designative and paradigmatic affixes.

The figures do not actually represent analyses. They do, however, show the associations from which the analyses are drawn. Further, the superscripts identify reshufflings mentioned in the presentation's title.

My analyses, not shown in the figures, depart somewhat from the standard theory. They handle stem variation with item and process statements but affix variation with item and arrangement statements. The respective terms are from Hockett's classic 1947 article: "Problems in Morphemic Analysis."

Returning to the figures, pre- and postfixes are separated from the kernal vocalic by hyphens. Productive paradigmatic, derivational and designative affix boundaries are marked by an equal sign. Consonantal overscore signals a consonant dissimilation in some or all dialects at the phonemic level.

As mentioned earlier, "horizontal" or synchronic etymology, here called reshuffling, is reflected in superscripts. "n" marks naturalized immigrants--usually of Latin origin. "r" marks renovated forms, usually, not exclusively, of native origin. Either case can, but does not absolutely have to, assume an original base or base plus affixes reanalyzed tri-morphemically. Otherwise, the assumption is that the association reflects "vertical" or diachronic etymology i.e. an inheritance from Anglo-Saxon.

The figures are drawn, not only to illustrate the interrelationships among morphemes, but also to reflect possible bases for phono-symbolic associations. The associated sets presented do not exhaust the groups of words I have examined. Rather, they are selected purposely to show cases of possible reshuffling. Since associations can be made either by prefix or by postfix, one word may belong to more than one set.

The labels are, with few exceptions, chosen on an ad hoc and suggestive basis. There is little, if any, theoretical or personal investment in them. Suggestions for improvements are welcome.

Modals

Stem	Conditional	Contracted	Negative	Reduced	Remarks
"will"	"would"	"won't"		"-'ll"	The condition- al negative is omitted be- cause it is merely a repe- tition of items shown.
w.-i.-l.	w.-u.-∅.=d.	w.-ow.-∅.	n.-∅.-t.	∅.-∅.-l.	
"shall"	"should"	"shan't"		"-'ll"	=d. & =t. are taken as relic /D ₂ 's such as "made," "said" & "burnt," "meant."
š.-æ.-l.	š.-u.-∅.=d.	s.-æ.-∅.	n.-∅.-t.	∅.-∅.-l/	
"can"	"could"	"can't"		- - - -	"must" doesn't seem part of this set mor- phemically.
k.-æ.-n.	k.-u.-∅.=d.	k.-æ.-∅.	n.-∅.-t.		
"may"	"might"	"mayn't"		- - - -	
m.-ey.	m.-ay. =t.	m.-ey.	n.-∅.-t.		

Metrical Reduction Set: /-v.r./n.	Temporals /-l.	Totals /-l.	FIGURE ONE
"ever" "e'er"	"still" Adv.	"whole"*	Relative
"never" "ne'er"	"till" Prep.	"sole"	Particular
"over" "o'er"	"while" Conj.	"full"	Plenary
"even" "e'en"	(Rel.)	"all"	Plural
"heaven" - - - -			
"given" - - - -	s.t.-i .-l.	h.w.-ow.-l.*	* "Whole" is an excellent exam- ple of reshuf- fling pressures. (See Relatives, Fig. 2.) Also, note: either the morphophonetic structur- ing h.-ow.-l. or its al- ternative form h.w.-ow.-l. would have no difference in phonemic expressions, e.g. either could be ex- pressed as /hohl/, /howl/, etc. Also, contrast "whole" with "holistic" if we as- sume a Mod. Eng. fusion of A.S. "hāl" & Greek "ολος."
	t.-i .-l.	s.-ow.-l.	
e.-v.r. e.-∅.r.	h.w.-ay.-l.	f.-∅.-l.	
n.-e.-v.r. n.-e.-∅.r.		o .-l.	
ow.-v.r. ow.-∅.r.			
iy.-v.n. iy.-∅.n.	Diagnoses /-l.		
h.-e.-v.n. h.-e.-∅.n.	"whole"*		
g.-i.-v.n. g.-i.-∅.n.	"hale"		
v.→∅. when scansion in poetry or hymno- dy requires.	"well"		
	"ill"		
	h.-ow.-l.*		
	h.-ey.-l.		
Asso- "ail" "heal"	w.-e .-l.		
ciated	i .-l.		
Verbs: ey.-l. h.-iy.-l.			

Proximate /h.- Relative /h.w.- Obviate /h.- MONSTRATIVE PARADIGM

"(h)it"	"what"	"that"	Neuter	/-t.
"here"	"where"	"there"	Locative	/-r.
- - - -	"when"	"then"	Temporal	/-n.
"(hence)"	"(whence)"	"(thence)"	Objective	/-n.=s.
"(hither)"	"(whither)"	"(thither)"	Motive	/- <u>h</u> .r.
(h.)-i .-t.	h.w.-a .-t.	<u>h</u> .-ae.-t.	In many dialects the h. of h.w.- is unexpressed before w. unless the kernal vocalic contains a w. e.g. "who" "how" h.w.-uw. h.w.-aw. /huw/ /haw/	
	o .			
	ə .			
h. -iy.-r.	h.w.-ey.-r.	<u>h</u> .-ey.-r.		
- - - - -	h.w.-e .-n.	<u>h</u> .-e .-n.		
(h. -e .-n.	h.w.-e .-n.=s.	<u>h</u> .-e .-n.=s.)		
(h. -i .- <u>h</u> .r.	h.w.-i .- <u>h</u> .r.	<u>h</u> .-i .- <u>h</u> .r.)		

Note: The h. of h.-i.-t. lost in S.E. occurs in some midland dialects. The personal pronoun association won over the association with the decaying monstrative set.

"here" may be: h.ȳ.-iy.-r. Consider British /hyéhə/, some midland ey. /hyähr/ and some southern "right here" a. as /rây+čihə/.

Demonstratives / <u>h</u> .- (Obviate is a sub-category.)		Relatives /h.w.-		Deligatives /- <u>h</u> .
"the"	Article	"how"	Instrumental	"which"
"this/these"	Non-Obviate	"who"*	Pronominal	"such"
"that/those"	Obviate	"whole"	Total	"much"
"then"	Temporal Obviate	"while"	Durative	"each"
"there"	Spatial Obviate	"why"	Causative	
"thus"	Consequential	"where"	Locative	Relative
"than"	Comparative	"whether"	Dual	Particular
"though"	Contrary	"when"	Temporal	Multitive
		"which"	Deligative	Unitary
		"what"	Neuter	
<u>h</u> .-iy.		h.w.-aw.		h.w.-i.- <u>h</u> .
<u>h</u> .-i .-s.	<u>h</u> .-iy.- <u>h</u> .z.	h.w.-uw.*	FIGURE	s.- <u>h</u> .- <u>h</u> .
<u>h</u> .-ae.-t.	<u>h</u> .-ow.- <u>h</u> .z.	h.w.-ow.-l.	TWO	m.- <u>h</u> .- <u>h</u> .
<u>h</u> .-e .-n.		h.w.-ay.-l.		iy.- <u>h</u> .
<u>h</u> .-ey.-r.		h.w.-ay.		
<u>h</u> .-ə.-s.	At least 3 kernal vocalic choices appear in various dialects for	h.w.-ey.-r.	*Only the subject form of the relative	
<u>h</u> .-ae.-n.	"what": a./o./ə.	h.w.-e .- <u>h</u> .r.	pronominal is shown.	
<u>h</u> .-ow.		h.w.-e .-n.	Its full declension with the personal pronoun is not included in the figures.	
		h.w.-a .-t.		

Negatives /n.- Positives /p.-

"no"	- - - - -	Pronominal Modifier	FIGURE THREE
"none"	"(young)-un"	Pronominal Head	
"na/ought"	"a/ought"	Noun and Adverb	
"never"	"ever"	Continuative	
"nary"	"every"	Countable	
"neither"	"either"	Full Correlative	Duals /-x.r.
"nor"	"or"	Reduced Correlative	
"not"	- - - - -	Negator	"nether"
n.-ow.-ø.		"rather"	"whether"
n.-ø.-n.	ø.-n.	"other"	Basal
n.-o.-t.	o.-t.	Alter-	Relative
a.	a.	Prefer-	native
n.-e.-v.r.	e.-v.r.	ential	h.w.-e.-ø.r.
n.-ey.-ø.r.=y.	e.-v.r.=y.	r.-æ.ø.r.	n.-e.-ø.r.
iy.	iy.	the	Intersec-
n.-ay.-ø.r.	ay.-ø.r.	Full	tions of the Pos.
n.-ow.-ø.r.	ow.-ø.r.	Reduced	-Neg. and the duals
n.-a.-t.			are the Correlatives.
o.			

n.-a.-t.
o.

Remotes/Continuals /y.-

"nix" Noun, Verb,	Words	"year" Noun, Annual
Interjection	Allied	"yore" Remote Temporal, Noun/Adv.
"nil" Adverb 1	to	"yon(d)" Remote Spatial 1, Adv./Adj.
"null" Adverb 2	Nega-	"yonder" Remote Spatial 2, Adv./Adj.
	tives	"beyond" Preposition/Conjunction
n.-i.-k.s. ⁿ		"yester- Bound
n.-i.-l. ⁿ		day/year"
n.-ø.-l. ⁿ		"yet" Dural Adverb

"nigh" Positive	n.-ay.	y.-iy.-r.
Adj., Spatial;		y.-ow.-r.
"near" Comparative	n.-iy.-r. ^r	y.-a.-n.ø.
Relic;		o.
"nearer" Comparative	n.-iy.-r.=r. ^r	y.-a.-n.d.=r.
Productive;		o.
"next" Superlative	n.-e.-k.=s.t.	b.i.y.=y.-o.-n.d.
"neighbor" Noun;	n.-ey.-b.=(o.)r. ^r	a.
"nonce" Noun,	n.-a.-n.=s.	y.-e.-s.t.=r.=
Archaic;	o.	y.-e.-t.
"now" Adverb,	n.-aw. Vicinals	
Temporal;	/n.-	
"new" Adjective	n.-yuw.	

Processive-Recessive /f.(r.)-

"far"	Adverb/Adjective
"farther"	1st. Comparative
"farthest"	1st. Superlative
"further"	2nd. Comparative
"furthest"	2nd. Superlative
"forth"	Adverb
"fore"	Adverb/Adjective
"first"	Relic Superlative
"fro"	Adverb
"former"	Compound Comparative
"foremost"	Compound Superlative

"fare"	Allied Nouns/Verbs
"front"	"

"for"	Allied Prepositions
"from"	"

f.	-a	.-r.∅.	Arrangement
f.	-a	.-r.∅.=r.	of pre- and
f.	-a	.-r.∅.=s.t.	postfixes
f.	-∅	.-r.∅.=r.	r e f l e c t
f.	-∅	.-r.∅.=r.	phonosymb-
f.	-∅	.-r.∅.=s.t.	lism as well
f.	-ow	.-r.∅.	as morphe-
f.	-ow	.-r.	mic rela-
f.	-∅	.-r. =s.t.	tionships.
f.r.	-ow.		
f.	-ow	.-r. m.-ow.-∅.=r. ^r	
f.	-ow	.-r. m.-ow.-∅.=s.t. ^r	

f.	-ey	.-r.	
f.r.	-∅	.-n.t. ⁿ	FIGURE FOUR

f.	-ow	.-r.	
f.r.	-∅	.-m.	

Particulars /s.-

"same"	Identical
"some"	Partitive
"such"	Deligative

"so"	Allied Adverbs
"soon"	"
"since"	"

"single"	Allied Adjectives
----------	-------------------

"similar"	"
"simple"	"
"several"	"
"separate"	"
"separable"	"
"certain"	"
"sudden"	"
"sole"	"

	Post- and
	suffixes
	of the al-
	lied ad-
	jectives
	are ar-
	r a n g e d
	mainly for
	phonosym-
	bolic pur-
	poses.

s.	-ow.
s.	-uw.-n.
s.	-i .-n.=s.

s.	-i .-n.g.=yuw.l. ⁿ
s.	-i .-m. = i .l.=ey.r. ⁿ
s.	-i .-m. =p. l.∅. ⁿ
s.	-e .-v.r.=æ.l. ⁿ
s.	-e .-p.r.=ey.t. ^{nr}
s.	-e .-p.r.=ey.b.=i.l. ^{nr}
s.	-∅.-r. =t.ey.n. ⁿ
s.	-∅.-d.n. ⁿ
s.	-ow.-i ⁿ

Much reshuffling occurs in this set. Both "farther" and "further" are alternate inflected forms of "far" synchronically. However, sources differ as to whether they were earlier inflected forms of "for" or "forth." Restating traditional etymological remarks like "false formation," "foremost" is apparently an A.S. renovation. "Former," a late form, apparently resulted--in M.E.--through analogy with the renovated "foremost."

f.-ow.r.m.=s.t. $\searrow$ f.-ow.-r.=m.-?=s.t. $\searrow$ f.-ow.-r. m.-ow.-∅.=s.t.

f.-ow.r.m.=r. $\searrow$ f.-ow.-r.=m.-?=r. $\searrow$ f.-ow.-r. m.-ow.-∅.=r.

Reductive/Defective /l.-

		"let"	"	"	hinder	"
"little"	Pos. Adj. (Quantitive)	"leak"	"	"	"	"
"less"	1st. Comparative Adj./Adv.	"lack"	"	"	"	"
"lesser"	2nd. " Adj.	"lag"	"	"	"	"
"least"	Superlative	"leave"	"	"	"	"
		"lop"	"	"	"	"
"late"	Pos. Adj. (Temporal)	"lump"	"	"	"	"
"later"	1st. Comparative Adj./Adv.	"limp"	"	"	"	"
"latter"	2nd. " Adj.	"lisp"	"	"	"	"
"latest"	1st. Superlative Adj./Adv.	"list"	"	"	incline	"
"last"	2nd. " Adj.	"lull"	"	"	"	"
		"loll"	"	"	"	"

"light" Pos. Adj. (Gravitative)

"loose(n)"

Allied Adjectives

"lose"

"lumber"

"lean" " " ns and ng

"lean"

"lame" " " indicate

"lank" " " naturali-

"lien"

"lone" " " zation from

"loss"

"low" " " Scandana-

vian and

1.-i .-t.=l. from other

1.-e .- t.

1.-e .-s.=Ø. Germanic

1.-iy.- k.^{ns}

1.-e .-s.=r. languages re-

1.-æ .- k.^{ng}

1.-iy.-Ø.=s.t. spectively.

1.-æ .- g.

Arrangements

1.-iy.-v.

of the con-

1.-a .- p.

sonant mor-

o .

1.-ey.-t.=r. phonemes in

1.-Ø .-m.p.

the postfixes

1.-i .-m.p.

do not neces-

1.-i .-s.p.

sarily have

1.-i .-s.t.ⁿ

morphemic

1.-Ø .-l.

significance

1.-a .-l.^{ng}

but may have

o .

phonosymbolic

1.-uw.-s.^{ns}=(n.)

significance.

1.- .-m.b.=r.

This list is

1.-iy.-n.

selective not

1.-iy.-n.ⁿ

exhaustive.

1.-o .-s.

a .

Countables /y.

"any" Unitary

"many" Multitive

"every" Positive

"nary" Negative

e .- n.=y.

m.-e .- n.=y.

e .-v.r.=y.

n.-ey.-Ø.r.=y.

Affirmatives

/y.-

"yes" Formal

"yep" Clipped

"yeah" Informal

"yea" Emphatic

"ay(e)" Dissimi-

lated?

y.-e .-s.

y.-e .-p.

y.-e .

y.-ey. FIGURE

ey. FIVE

ay.

Multitives /m.-

"many" m.-e .-n.=y. Countable

"much" m.-Ø.-c. Deligative

"more" m.-ow.-Ø.=r. Comparative

"most" m.-ow.-Ø.=s.t. Superlative

Possibly,

"ay(e)"

resulted

from an

earlier

y.-ey.

ay.

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VERB POSITION AND VERB TYPE IN OLDER GERMAN:
EVIDENCE FROM THE HILDEBRANDSLIED

Jerry Krauel

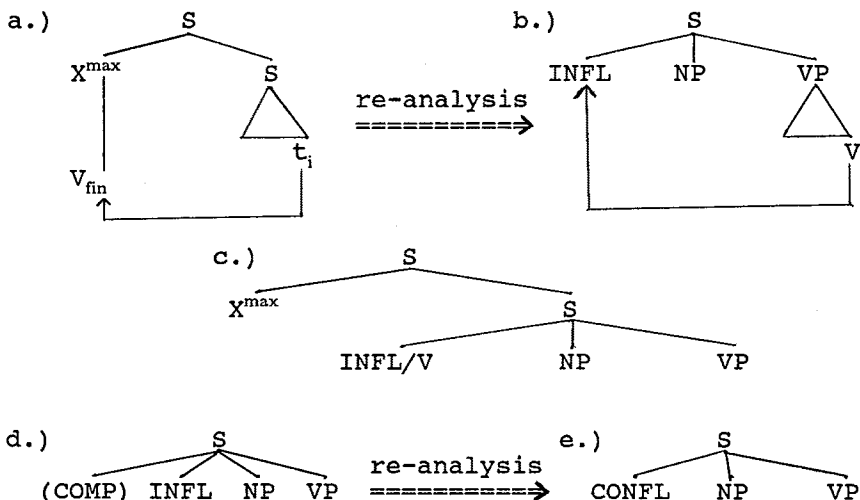
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For the past hundred years scholars have been trying to explain why German developed three different positions for the finite verb: initial position in commands and questions, second position in regular main clause assertions, and final position in subordinate clauses. Assuming an original verb-final base in IE, they have focused primarily on explaining how the main clause verb migrated from final position to second position. To date, however, their efforts have met with only limited success. While each new theory may have contributed something to our overall understanding of this question, no theory has emerged which has attained the status of being recognized as the standard theory on the subject.

In this paper I want to examine only the most recent of the theories put forward, that by Jürgen Lenerz, and point out what I see as some of the deficiencies of his analysis. I will base my arguments on one of the oldest documents in German literature, the Hildebrandslied (Hl). In particular, I want to illustrate that auxiliary verbs, which Lenerz ignores entirely in his analysis, played a significant role in the shift of the main clause verb to second position, and that verb-second position was already well established in main clauses by the beginning of the OHG period (c. 750-800 A.D.), albeit with variations still allowable until the tenth century.

In his 1984 book and in a 1985 follow-up article Lenerz accounts for the development of verb-second position by means of a double shift involving the finite verb and a nonverbal constituent: The first shift moves the finite verb from final position to initial position, and the second optional shift moves a nonverbal constituent ahead of the verb, thus resulting in verb-second position (1984, 151-54; 1985, 126). The original motivation for the shift of the verb, according to Lenerz, was that any element ($X^{\max}$), including the verb, could be moved to the head of the clause in Germanic (a. below), and that this occasional verb-initial variation, which was used in lively narration and served to emphasize the whole content of the sentence, became re-interpreted as the habitual pattern (b. below).

From Lenerz 1985, 119:



Since there were other structures with COMP (d.), this new S-initial INFL then became identified with COMP, and was re-analysed as CONFL (e.) during the OHG period, specifically, by the beginning of the tenth century (1984, 137). The preposing of a nonverbal constituent ahead of CONFL continued as an option until the eleventh century, when it became mandatory.

The aspects of Lenerz' analysis with which I take issue, and which I want to discuss here are: 1. his contention that the verb-initial pattern, which was only an "occasional stylistic rule" (1985, 127), could have been re-interpreted as the habitual pattern; 2. his failure to recognize what several other researchers have observed, namely, that auxiliary verbs behaved differently than full verbs in their historical development; and 3. his claim that COMP and INFL merged into CONFL during the OHG period. The H1 contains clear evidence, in my view, that the marked verb-initial clauses of which Lenerz speaks serve a specific function, and are not to be confused with the more numerous verb-second clauses, which contain chiefly, but not exclusively, auxiliary verbs. We can see from the H1 that auxiliary verbs played a more central role in laying the foundation for verb-second position than did the clause-initial verbs.

The only text of the H1 which we possess is very short, consisting of only 64 lines, but it is an important linguistic document in that, unlike most other OHG texts, it is free of any Latin influence. Although

the only extant manuscript dates from the ninth century, it is generally accepted that the work must have circulated orally for a time before being written down. According to a recent, in-depth analysis by Richard d'Alquen and Hans-Georg Trevers, the extant text represents the culmination of a chain of transmission from a High German oral version, through Low German oral and written versions, and finally High German written versions. The poem was reshaped by bards at various stages in its oral transmission throughout the German-speaking territory, acquiring new clauses and losing others (1984, 17-19). In a very real sense we might view it as a geographical and historical cross-section of the German spoken in the decades leading up to the ninth century.

The work contains a total of 72 clauses with finite verbs, 49 of which are main clauses.¹ I excluded the 12 main clauses from my figures which contain only one element other than the finite verb, because of the difficulty in pinpointing the position of the verb in relation to only one other element. This leaves a total of 37 main clauses with three or more elements, which are represented by the figures in Table 1 below. I divided these clauses into five categories based on the type of verb found in the clause:

Table 1: Verb Position According to Verb Type

Category	Position: Initial	Second	Final	Total
1 - Copular Verbs	1	10	0	11
2 - Modal Auxiliary Verbs	1	3	0	4
3 - Semi-Auxiliary Full Verbs	0	3	1	4
4 - Unstressed Full Verbs	1	6	4	11
5 - Stressed Full Verbs	6	1	0	7
Subtotal 1 - 2	2	13	0	15
Subtotal 3 - 4	1	9	5	15
Subtotal 1 - 4	3	22	5	30
Total 1 - 5	9	23	5	37

The only verb in Category 1 is the copular verb 'to be' (wesan) used in conjunction with several types of predicate complements. It occurs in second position in 10 out of 11 clauses (uwas 7b, ist 12b, uwas 23b, was 24, was 26a, was 26b, was 27, bist 35, ist 40, si 54). In one it is initial (pist 37a). Some examples are:

¹ Based on the text version and interpretation of the Hl by Rosemarie Lühr 1982, I. 2-4, II.

- (12b) chud ist mir al irmindeot
 (23b) dat was so friuntlaos man
 (37a) pist also gialtet man

Category 2 contains the modal auxiliary verbs wellan, sculan and magan used in conjunction with a dependent infinitive. In three out of four clauses the modal is in second position (scal 34, scal 49, maht 51). In one clause it is initial (wili 36b). Some examples are:

- (34) mit geru scal man geba infahan
 (36b) wili mih dinu speru werpan
 (51-2) doh maht du nu aodlihho,..., in sus
 heremo man hrusti giwinnan

The four verbs which I classified under Category 3 serve a semi-auxiliary function in that they are full verbs accompanied by a dependent infinitive. Three of them are in second position (gihorta 1, furlaet 19, lettun 59), and one is in relative final position (gistuont 8b-9a).² Some examples are:

- (1) Ik gihorta dat seggen
 (8b-9a) her fragen gistuont fohem uuortum
 (59) do lettun se ærist asckim scritan

Because of Lernerz' arguments, I found it meaningful to divide the remaining full verbs into stressed and unstressed categories. The unstressed full verbs of Category 4 show a variety of positions, but the majority (6 out of 11) are second (sagetun 14, heittu 16b, raet 21, sagetun 38, gisihi 42, wallota 46). One is initial (wettu 28), and four are final (or near-final) (ritun 6b, uuet 11b, giweit 17a, gistuontun 22-3). Examples of all three positions are:

- (6b) do sie to dero hiltiu ritun
 (11b) ik mi de odre uuet
 (14) dat sagetun mi usere liuti
 (21) he raet ostar hina
 (22-3) des sid detrihhe darba gistuontun,
 fatereres mines
 (42) wela gisihi ih in dinem hrustim

² The placement of elements after a "final" verb has been possible throughout the history of German (Lernerz 1984, 169ff.).

The stressed full verbs of Category 5, on the other hand, exhibit an overwhelming preference for initial position. Six are at the head of the clause (garutun 5a, gurtun 5b, floh 17b, want 30, spenis 36a, heuwn 62), while only one is in second position (stoptun 61a).

Research into historical syntax has traditionally employed prose texts rather than poetry texts as the corpus for analysis, in accordance with the argument that word order in poetry might easily be altered to conform to the metre of the poem. One advantage of poetry texts, however, is that they allow us to ascertain the stress patterns of the work more easily, and to pick out the stressed elements. In the particular case of Germanic alliterative rhyme we can determine with a high degree of certainty that the clause-initial verbs under Category 5 are stressed, and that most other verbs are not.³

In alliterative rhyme the initial sounds of stressed words alliterate. In order to share alliteration, an element has to be stressed, and although verbs do not normally alliterate, the seven verbs in Category 5 do alliterate. They are, therefore, stressed. Only one is not initial (stoptun 61a), but it, too, apparently alliterates. Examples are:

- (5a-b) garutun se iro gudhamun,
 gurtun sih iro suert ana
- (18a-b) (forn her ostar giweit)
 - floh her otachres nid -
- (30) want her do ar arme wuntane bouga
- (36a-b) spenis mih mit dinem wortun,
 wili mih dinu speru werpan
- (61a-b) do stoptun to samane,
 staimbort chlubun
- (62) heuwn harmlicco huitte scilti

In all of these sentences except 61 the initial sound of the first half line alliterates with the initial sound of the first stressed word in the second half line. In 61 the st of stoptun alliterates with the st of staimbort, but it is not the initial element in the clause.

It is not obvious, on the other hand, nor is it likely, given the stress patterns of Germanic alliterative rhyme, that any of the second-position or final-position verbs from Categories 1 - 4 is stressed. Many of them occur in lines with no alliteration at all. We can discern from the figures in the table two separate

³ Paul Hopper makes a similar observation with respect to clause-initial verbs in the OE Beowulf (1975, 52-54).

and distinct clause types co-occurring within the same text: one in which the stressed verb, of the type which Lenerz discusses, is almost exclusively in initial position, and the second in which the unstressed verb is predominantly in second position, but may also be initial or final. It is difficult to see how the first type could have laid the groundwork for the second type, as Lenerz claims, because of the stark positional contrast which they display here.

The figures from Table 1 also reveal a discrepancy between copular and modal auxiliary verbs from Categories 1 and 2, on the one hand, and full verbs from Categories 3 and 4, on the other. The former occur only in initial and second position, predominantly in second (13 out of 15), while the latter may also occur in final position (5 out of 15). The copular verb 'to be', which is the shortest and semantically weakest of all verbs (i.e., the "lightest"), stands overwhelmingly in second position (91%). Since it is also used as an auxiliary in other texts, in the interest of brevity and convenience, I will refer to all verbs from Categories 1 and 2 as auxiliaries. If we assume, as most researchers in this area do, that final position was the original one, and that the main clause finite verb shifted from final to second position, we can already see by the time of the H1 that this trend has progressed quite far, especially with certain classes of verbs.

The special positional status of certain "light" or auxiliary verbs within this entire process has been noted before by several researchers. In 1892 Jacob Wackernagel observed that mono- and bisyllabic verbs (especially 'to be') exhibited a much stronger tendency to occupy second position than polysyllabic verbs in the ancestral language ("Grundsprache") (427-29). In 1938 Jean Fourquet stated that the placement of auxiliary verbs (including 'to be') in second position had become the rule by the OHG period ("un fait 'grammatical'") (138). In his 1975 study of Proto-Germanic syntax Paul Hopper also points out that the auxiliaries 'to be', 'to have', and 'to become' are regularly second in the older Germanic languages, as opposed to the full verbs, which retain their clause-final position much longer (56). The figures here indicate that this class of verbs (i.e., Categories 1 and 2) has indeed virtually completed the shift to second position.

We can see why auxiliary verbs might have behaved differently than full verbs if we examine the properties which they share with another class of elements, namely, pronouns, and if we look at how these two classes fit into the general structure of the clause. Like pronouns, auxiliary verbs are generally shorter than full lexical elements, but more importantly, they serve to convey

mainly grammatical rather than lexical information. Pronouns specify the person, number and gender of a previously stated or understood noun. In like manner, auxiliary verbs express the person, number, tense, mood and voice of the full lexical verb, which occurs elsewhere in the clause as a participle or infinitive.

In the H1 auxiliary verbs are always placed adjacent to the pronouns, either before or after, and this cluster of pronouns and auxiliaries always occurs at or near the head of the clause. Very often a short time adverb (do or nu) forms part of this cluster. This is fully consistent with Hopper's observation that the clause in Germanic customarily opened with a series of 'light' elements (i.e., pronouns, particles and light adverbs) (1975, 82-83). The heavier noun elements with greater lexical value, including noun subjects, are normally placed in the second half of the clause. The following examples from the H1 illustrate this:

- (11b) ik mi de odre uuet
- (26a) her was eo folches at ente
- (26b) imo was eo fehta ti leop
- (49) nu scal mih suasat chind suertu hauwan
- (54) der si doh nu argosto...ostarliuto

The option always remains of preposing any element to this cluster if it is to be stressed, in which case it normally alliterates. For example:

- (12a/b) (chind, in chunincriche)
chud ist mir al irmindeot
- (17a/b) forn her ostar giweit
floh her otachres nid
- (34) mit geru scal man geba infahan

The nine full verbs from Categories 3 and 4 which occur in second position exhibit exactly the same positional characteristics as the auxiliary verbs: they are adjacent to the pronouns and short time particles, and together with these they constitute a cluster of unstressed elements at or near the head of the clause. Some examples are:

- (1) Ik gihorta dat seggen
- (14) dat sagetun mi usere liuti
- (59) do lettun se ærist asckim scritan

The unstressed full verbs parallel the auxiliary verbs more closely than they do the stressed full verbs, and exhibit a far greater tendency to conform to the positional pattern of the auxiliary verbs.

We can determine from the remarks by Hopper and Fourquet, and from the analysis here, that the practice of verb-second placement had been increasing for some time prior to the OHG period. German was in the process of developing a number of important compound verbal constructions with auxiliary verbs, which meant that auxiliaries were playing a more dominant role by the eighth and ninth centuries than they had previously (see Hopper 1975, 56). For example, the common forms of the modal auxiliaries in the various Germanic languages point to the genesis of the modal plus infinitive construction during the Germanic period; Late Germanic also witnessed the development of a compound passive voice with 'to be' and 'to become' as auxiliaries, replacing the synthetic medio-passive which is still found in Gothic (Ebert 1978, 61); and in the centuries immediately following the Hl, i.e. during OHG and into the MHG period, new periphrastic perfect tenses with the auxiliaries 'to have' and 'to be' came into common use, replacing simple verb forms in many contexts (Ebert 1978, 58-59).

If it is true that auxiliary verbs, by their nature and from their origin, had a firm hold on second position, then it follows that the more frequent use of auxiliaries served to entrench the verb-second pattern more firmly. By the time of the Hl auxiliaries are already firmly entrenched in second position, and the majority of unstressed full verbs have already followed suit. Verb-second is clearly the most productive alternative for unstressed verbs by this time, at the expense of initial and final positions. In the following decades verb-final clauses decrease in frequency, and although clause-initial stressed verbs retain their distinctive character through the ninth century, they, too, conform to the verb-second pattern by the tenth century (Ebert 1978, 38).

In the Hl the identification of INFL with COMP in second position is already strong, though, perhaps, not fully complete. One significant class of verbs, the auxiliaries, has established itself in the COMP position by this time, and another, the unstressed full verbs, is well on its way to doing so. We also see signs that the stressed full verbs are beginning to adopt this pattern. In one instance, a stressed alliterating full verb, stoptun in line 61a, is in second position. On the whole, however, the stressed full verbs retain a stronger affinity with other stressed initial elements which are proposed as $x^{\max}$. Only later, in the course of the OHG period, are these verbs fully integrated into the verb-second pattern which had been established by the unstressed verbs.

Lenerz' explanation that S-initial INFL merged with COMP during the OHG period is consistent with the

information presented here, but only as it applies to the class of stressed verbs in initial position. It does not account for the majority of verbs from other classes which appeared in second position prior to this merger. The stressed full verbs were only the last to fall into line. The merging of S-initial INFL with COMP represents, therefore, only the last stage, or at least a very late stage in the standardization of verb-second position in German, and not the initial stage, as asserted by Lenerz.

The option of preposing full lexical finite verbs was greatly reduced during the Old and MHG periods as the compound perfect tense came into greater prominence. Auxiliaries were used in greater number, and the full lexical weight of the verbal construction was borne more and more by the participle or infinitive, which, in modern German, can be preposed if special emphasis is needed, leaving the auxiliary in second position. The non-finite verb has, in effect, replaced the finite verb in stressed initial position. In this respect German has remained largely unchanged since the High Middle Ages.

In this paper I have tried to point out what I see as one major omission in an otherwise exhaustive and instructive treatment of historical German sentence structure by Jürgen Lenerz. His failure to recognize the role played by auxiliary verbs led to the conclusion that a low-frequency stylistic variation, clause-initial stressed verbs, provided the basis for the verb-second pattern in OHG. The H1 shows that the majority of main clause finite verbs are already in second position at the beginning of the period, with the clause-initial verbs forming the major exception to this pattern. CONFL in second position is easily the most productive clause type by Early OHG.

Lenerz is concerned with accounting for the development of verb-second position in German by the most economical set of rules. I believe, however, that the rules resulting from the avenue of investigation which I have been pursuing here can be just as economical. We still need to establish more concretely why auxiliaries occupied second position originally, but I think we can find a further clue in the sentence particles. According to Wackernagel, IE contained a number of sentence particles in the enclitic second position (1892, 427). Some of them may have performed grammatical functions, like the Gothic question particle *-u*. Further investigation into these sentence particles, which largely died out or were re-interpreted in the Germanic languages, might reveal a connection between their placement and that of the auxiliary verbs in the COMP position in Germanic and OHG.

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ROBUSTNESS OF THE BERLIN-KAY HIERARCHY: EARLY ENGLISH POETRY

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Color terms, words designating specific regions of the visual spectrum, have long fascinated students of lexical meaning. In English the literature on the meaning of color terms goes back more than a century (Gladstone 1858). Color terms, because they constitute a link between the sound substance of language and an identifiable portion of the physical world, are a probe into the nature of lexical meaning. In sociolinguistics and stylistics color terms enable researchers to examine the pragmatics of language use by showing how members of specific speech communities used the meaning-making possibilities in a language within a particular context.

For much of the twentieth century linguists held that the way speakers divided up the color spectrum had no necessary connection to anything in the physical world or the human brain (Bornstein 1975; Berlin & Kay 1969)—that languages' inventories of color terms could vary almost without constraint. Such relativist views were called into question, however, by the publication in 1969 of Berlin and Kay's Basic color terms: their universality and evolution.

B&K argued that some color terms, e.g., English blue, are basic, while hyphenated color terms, e.g., blue-green, morphologically complex color terms, e.g., aquamarine, and terms referring to the color of physical objects, e.g., canary, are not basic. In addition linguists had been led astray by concentrating on the boundaries between color terms instead of asking consultants to point out the best instance of the color designated by a given term. B&K also argued that there is a set of 11 basic color terms from which all languages draw their color terms. And comparable color terms in any two languages designate the same portion of the visual spectrum. Most important, languages tend to evolve by adding color terms according to a universal implicational hierarchy, which is given in Figure 1. A few languages, e.g., Hoka, have words for 'white', 'black', and 'red', but they lack basic color terms for colors to the right of 'red'. Other languages, e.g., Mandarin, have words for 'white', 'black', 'red', 'green', 'yellow', and 'blue', but lack words for 'brown', 'grey', 'purple',

'orange', or 'grey'. Other languages, e.g., Cantonese, have all 11 basic color terms.

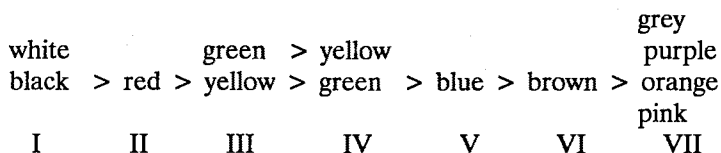


Figure 1. Berlin & Kay's Implicational Ordering

Absence of a basic color term does not mean that speakers cannot talk about the color designated by that term. It is always possible for speakers to talk about a color in the absence of a color term by referring to the color of some object whose color is already known to both speakers.

Though it was stringently critiqued after its initial publication, B&K's implicational hierarchy has held up well over the past 2 decades. The most important modifications have been the replacement of Stage I with MACROWHITE and MACROBLACK, Stage II with MACRORED, and the replacement of 'green' with GRUE 'green or blue' in stages III and IV (Kay 1975; Witkowski & Brown 1977). Perhaps most important for this study was the removal of 'grey' from its position in Stage VII in the implicational order, with 'grey' being designated as a "wild card" term that can appear at any time after Stage III or IV (Berlin & Kay 1969; Kay 1975; Witkowski & Brown 1977).

Besides testing B&K's hierarchy for a large number of languages, linguists, psychologists, and biologists have extended B&K's work in several ways. Most such work has sought to answer 2 questions. Why do these particular regions in the visual spectrum receive basic color names? And why, among the 11 possible basic color terms, do languages add them according to the implicational hierarchy? Hays et al. (1972) and Rosch (1971, 1972) have shown that "focal areas" in the color spectrum are most perceptually salient and most likely to receive a basic color term in any language. Bornstein et al. (1976) have shown that semantic categories for color exist in bees, pigeons, and human infants. Infants as young as 4 months appear to respond differentially to focal regions on the color spectrum. "It can now be stated with reasonable confidence that human beings are in some manner 'wired' or 'programmed' for partitioning the physically continuous hue spectrum into the categories of red, yellow, green, and blue" (Witkowski & Brown 1977: 50). Biological explanations for the anthropological and psycholinguistic data have been put forth based upon the neuroanatomically-based theory of color vision called the "opponent process" theory, which was developed

in the nineteenth century by Hering. "If the opponent scheme of Hering . . . is reflected in color terms, words for black, white, red, green, yellow, and blue should be primary terms, whereas all other color words should have a lower salience" (von Wattenwyl & Zollinger 1979: 281).

My own work on color terms has sought to extend B&K's work in two directions. In 1969 B&K speculated on the basis of rather slender Soviet data (Istomina 1963) that children acquiring their first language might gain control over semantic categories for color, along with the associated basic color terms, in an order that reflected the implicational hierarchy in Figure 1. My work confirmed B&K's conjecture (Monteith & Mills 1975; Mills 1980). Later work lent support for designating 'grey' as a "wild card" term and for adopting the MACRO categories that had been suggested for the earlier stages (Mills 1984).

Another line of investigation sought to examine the addition of basic color terms to English. These studies began with the observation that Old English heroic poetry is among the most intensely visual poetry ever written (Renoir 1962; Isaacs 1962; Irving 1961). In fact, OE heroic poetry has often been compared to the cinema (Elliott 1963). Yet had this poetry been cinema, it would have been black-and-white cinema. "One of the first things that strike the reader of Old English poetry is the comparatively small number of genuine color-words that it contains" (Mead 1899: 171). My studies of The Battle of Maldon and The Battle of Brunanburh from The Anglo-Saxon chronicle (Cassidy & Ringler, eds. 1971), pointed out that there are no basic color terms in Maldon and only 2 such terms in Brunanburh. But the presence of these particular terms, hwit 'white' and græge 'grey', is critical. For even if we did not have Mead's (1899) compilation of color terms in OE poetry, given in Table 1, we would have been able, following B&K's implicational hierarchy, to use the presence of 'grey' to argue that all the terms to the left of 'grey' were available to the OE poets if they had chosen to use them.

Term:	white	black	red	green	yellow	blue	brown	grey	etc.
Tokens:	31	8	20	41	4	1	11	7	0
Total Tokens:	123								

Table 1. Basic Color Terms in Old English Poetry

In B&K's terminology Old English was an early Stage VII language. I argued in Mills 1976 that the basic color terms from 'black' through 'brown' could have been used in the poems but were not used for aesthetic or sociolinguistic reasons. In fact, Beowulf contains only 'white' (1), 'black' (1), 'yellow' (1), 'brown' (1), and 'grey' (2) (Bessinger 1969).

Since Mills 1976 I have wondered about color term use in English after the Old English period: what color terms were used in Middle English (ca. 1150-1450) and Early Modern English (ca. 1450-1650)?

From the OED and other studies we know that 'purple' was added to the language after the Norman Conquest. 'Blue' (OE blaw) appears to have been very rare in OE, while "the favorite color in Old English poetry . . . is green" (Mead 1899: 200), mostly in religious poetry, which indicates that OE had just begun to subdivide the macro-category GRUE. The OED maintains that 'blue' dropped out of use and re-entered the language from French in Middle English. According to the OED, the earliest use of orange as a color term is in 1600. 'Pink' is even more recent. The second edition of the OED cites 1828 as the earliest use of 'pink' as a color, with possible occurrences as early as 1720. In the present study I have come across 2 possible sixteenth century occurrences of 'pink' as a color term.

The present study began with a rather large statistical analysis to test whether Shakespeare might have written the lyric "Shall I die? Shall I fly" (Mills 1989). I examined 8,121 word-tokens from the non-dramatic verse of Shakespeare, the Earl of Oxford, Donne, Jonson, Sidney, and George Herbert. Color term occurrence in these samples seems to mirror that of OE: from the terms to the right of 'white' and 'black', only 'red' and 'grey' are present.

It might be objected that sheer frequency could account for these results. Could we expect any color terms to occur in a sample of 8,000 words? Table 2 contains B&K's basic color terms together with their Standard Frequency Indexes of occurrence in Late Modern English based upon large corpus-based studies.

white	black	red	green	yellow	blue	brown	grey	purple	orange	grey
64.4	65.8	64.5	63.5	60.5	62.9	59.7	59.2	54.4	55.6	55.7

Table 2. Standard Frequency Indexes of Basic Color Terms
(from Carroll et al. 1971)

A word with an SFI of 60--'yellow' for example--would be expected to occur about once in every 10,000 words sampled, while an SFI of 70 would predict one occurrence in 1,000 words, and 50 would predict occurrence once in every 100,000 words. Though the difference in SFI between 'purple' (54.4) and 'black' (65.8) is slightly over an order of magnitude, SFI's do not appear to explain the particular proportions of color terms found in OE by Mead (1899) and subsequent researchers. From this we can conclude either that the SFI's of color terms, which

have not been calculated for OE, differed in OE from those of LNE, or that frequency of occurrence in general is not a robust explanation for the proportions that we have observed. Examination of color terms in Middle and Early Modern English supports, I believe, the proposition that something other than frequency governs the proportions of color terms found in English poetry of all periods.

The present study is a sort of meta-analysis based upon the findings of earlier researchers. That is, the data reported here are taken from other studies, mostly concordances and dictionaries, covering written English from the Old English (ca. 450-1150), Middle English (ca. 1150-1450), Early Modern English (ENE) (ca. 1450-1650), and Late Modern English (LNE) (ca. 1650-present), though my survey of the last period ends, for a number of reasons, at approximately 1800.

The relative paucity of OE primary materials is reflected in the small number of compilations available. Besides the work of Mead (1899) and the second edition of the *OED*, I surveyed Bessinger's (1969) concordance to *Beowulf* and his concordance to "the extant corpus of Old English verse" (Bessinger 1978). For the most part, all these sources reflect the frequencies of occurrence given by Mead (1899) and reproduced here in Table 1.

As Mead pointed out, 'green' is the most popular color term, with 'white' close behind, followed by 'red'. The low frequency of 'black' is a bit odd, and Bessinger (1978) actually records more occurrences of 'black' (40) than any other term. We can only assume that Bessinger's computerized search found occurrences of 'black' that Mead missed. Of particular interest are the large number of occurrences of 'grey', which will continue through all periods, and the very large number of times we find 'brown'. Proportionally, there are almost three times as many occurrences of 'brown' in OE than in later periods. Most of the excess occurrences of 'brown' can probably be explained by the fact that OE *brun* could mean more than just 'brown'. Mead also points out "no color is more distinctive than red, . . . of the twenty passages in which *red* occurs, all but four are found in the religious poems." The important fact to remember is that after--that is, to the right of--'green' in Figure 1 only 'brown', which is suspect, and 'grey' occur with any abundance in OE poetry.

Moving to Middle English, we find that data are much more abundant: more writings in more genres survive, more concordances have been produced, and color terms are more abundant than in earlier times. After the Norman Conquest English poets began to use much more color. Surveying 858 lines of Chaucer's "Prologue," Mead found "black, white, brown, blue, green, grey, pers (sky-blue), red, yellow" (Mead 1899: 172). For this study I surveyed Tatlock's (1927)

concordance to Chaucer and the Romaunt of the Rose, Preston's (1975) Concordance to the Middle English shorter poem, Kottler & Markman's (1966) concordance to Cleanness, St. Erkenwald, Sir Gawain and the Green Knight, Patience, and the Pearl, and Kurath et al.'s (1957) Middle English dictionary (MED). Volumes of the MED covering 'white' and 'yellow' were not available, so entries for those terms are those found in citations for other terms. Results of the ME survey are given in Table 3.

Term:	Chaucer	<u>Romaunt</u> <u>Rose</u>	<u>Pearl</u> , etc.	Shorter poems	<u>MED</u>
white	110	18	22	40	7
black	72	11	9	44	18
red	104	8	14	91	55
green	92	19	55	69	24
yellow	12	8	1	3	1
blue	13	1	4	11	10
brown	9	4	6	10	6
grey	13	4	7	32	5
purple	8	2	4	5	11
orange	0	0	0	0	0
pink	0	0	0	0	0

Table 3. Color Terms in Middle English Poetry

I have drawn the dotted line under 'green' to emphasize the fact that the ME poems reflect basically the same pattern as did those of OE: heavy use of 'white', 'black', 'red', and 'green', with sparing use of terms on the "later" end of the hierarchy in Figure 1. Again, I would point out that in LNE 'green' has an SFI of 63.5, while 'yellow' has an SFI of 60.5. Thus, frequency of occurrence in the language in general does not seem to offer much explanation for the heavy fall-off between 'green' and 'yellow'. The ME pattern matches that of OE in the occurrence of 'grey'. ME differs from OE in the beginning of the use of 'purple' and the rise in the frequency of 'blue'. Proportionally, 'yellow' and 'brown' decrease from OE to ME.

Data are much easier to obtain for Early Modern English. I am presenting the survey of ENE in three tables. For the period 1450 to 1579, the year Edmund Spenser published his Shepherd's Calendar, I surveyed Fox & Waite's (1987) concordance to John Skelton's works, Eva Haugen's (1941) concordance to Wyatt, and entries prior to 1579 in Bailey et al.'s (1975) Michigan Early Modern English materials. These findings are given in Table 4.

As with ME, the pattern here is basically the same as that of OE, with heavy use of 'green' and terms to the left of it in Figure 1 and sparing use of terms to the right of 'green'. Again, this pattern differs from that of OE in the increasing use of 'blue' and, especially, 'purple'.

Term:	Wyatt	Skelton	Michigan
white	5	20	291
black	3	16	200
red	0	17	76
green	4	22	146
yellow	0	1	58
blue	0	12	20
brown	1	1	35
grey	1	16	6
purple	1	2	12
orange	0	0	0
pink	0	1?	0

Table 4. Color Terms, 1450-1579

For the Elizabethan period results are given for Spenser, Marlowe, Sidney, Donne, Jonson, Shakespeare, and the King James Bible in Table 5. References to specific concordances are given in the bibliography.

Term:	Spenser	Marlowe	Sidney	Donne	Jonson	Shakespeare	Bible
white	51	56	33	27	15	167	71
black	59	43	30	13	18	195	19
red	32	16	10	19	0	98	27
green	87	15	9	4	11	109	38
yellow	16	5	0	1	3	31	4
blue	14	6	1	0	2	31	49
brown	3	4	0	3	2	27	4
grey	22	2	5	2	2	48	9
purple	37	16	0	1	3	18	38
orange	0	0	0	0	0	0	0
pink	0	0	0	0	0	1?	0

Table 5. Color Terms, 1579-1610

Tables 4 and 5 contain puzzling entries for 'pink'. In John Skelton's poem "A Garland of Laurel" we find line 626: "Sum were

made pevysshe, porissshly pynk iyde". In Shakespeare's Antony and Cleopatra (ii,7,121) we also find "Thou monarch of the vine, Plumpy Bacchus with pink eyne!" The question, of course, is whether pink was a color term that could be applied to any noun or restricted to eyes. If pink here means the color term 'pink', then this is its earliest recorded use.

Once again, color term usage in the high Renaissance matches the ME pattern, the basic OE pattern with an increased use of 'blue' and 'purple'.

Results for the late Renaissance are given for Milton's poetry (Ingram & Swaim 1972) and prose (Sterne & Kollmeier 1985), and combined results for George Herbert (DiCesare & Mignani 1977), Crashaw (Cooper 1981), and Vaughan (Tuttle 1969) are given in Table 6.

Term:	Milton	Herbert, Crashaw, Vaughan
white	43	69
black	42	37
red	20	24
green	47	30
yellow	6	0
blue	13	2
brown	6	1
grey	19	1
purple	21	21
orange	0	0
pink	0	0

Table 6. Color Terms in the Late Renaissance

Again, the OE pattern, as extended to 'blue' and 'purple' in ME, continues. The huge bulge in 'purple' for the minor poets is accounted for by 20 occurrences of this color term in the poetry of Richard Crashaw.

In Table 7 are given results for 3 poets and a playwright from the Restoration--Rochester, Marvell, Cowper, and Congreve (combined results)--4 poets from the height of the Enlightenment--Dryden, Swift, Pope, and Johnson--one poet, Gray, from the twilight of the era, and William Blake, who in many ways marks the beginning of a radically new era in English literature.

It is here in LNE that we begin to see a blurring of the OE pattern of color term use, though the pattern, as modified in ME, can still be discerned. But it is here that we note the heavy use of 'blue' in

Term:	Rochester etc.	Dryden	Swift	Pope	Johnson	Gray	Blake
white	41	104	31	104	1	3	90
black	49	91	26	143	8	6	41
red	29	45	18	74	1	1	109
green	66	112	15	99	3	9	61
yellow	7	47	4	23	0	0	18
blue	15	29	11	85	0	5	38
brown	5	16	6	26	0	2	13
grey	16	7	6	29	1	0	39
purple	13	97	8	109	5	6	20
orange	0	0	0	0	0	0	0
pink	0	0	0	0	0	0	0

Table 7. Color Terms, 1650-1780

Pope's work, the abundance of 'purple' in Dryden and Pope, and the relative scarcity of 'green' in Blake. Still, we can divide color term occurrences into the relatively abundant use of "early" 'white', 'black', 'red', and 'green' on B&K's hierarchy and the relatively sparse use of "later" terms to the right of 'green'.

The overall trend of color term use in the history of English can be seen if we present totals for all color terms for all periods, as in Table 8:

Term:	OE	ME	ENE	LNE
white	31 (25.2%)	190 (20.3%)	834 (26.9%)	374 (17.9%)
black	8 (6.5%)	136 (14.6%)	712 (23.0%)	364 (17.4%)
red	20 (16.3%)	217 (23.2%)	352 (11.3%)	277 (13.3%)
green	41 (33.3%)	235 (25.2%)	529 (17.1%)	365 (17.5%)
yellow	4 (3.2%)	23 (2.5%)	127 (4.1%)	99 (4.7%)
blue	1 (.8%)	29 (3.1%)	154 (5.0%)	183 (8.8%)
brown	11 (8.9%)	29 (3.1%)	87 (2.8%)	68 (3.3%)
grey	7 (5.7%)	56 (6.0%)	134 (4.3%)	98 (4.7%)
purple	0 (****)	19 (2.0%)	171 (5.5%)	258 (12.4%)
orange	0	0	0	0
pink	0	0	2? (****)	0

Table 8. Totals and Percentages for all Periods

Percentages in parentheses reflect the percentage of all color terms for that period.

Although there have been fluctuations for totals and percentages for each term, Table 8 shows that the pattern established in OE held practically constant up to 1650. For OE 'white', 'black', 'red', and 'green' accounted for 81.3% of basic color terms used; for ME these terms amounted to 83.3%; for ENE they still accounted for 78.3%. It is only in LNE that the percentage of these terms drops to 66.1%, still a hefty portion of all basic color terms.

I would argue that B&K's implicational hierarchy, especially as modified in later work, accounts for these data better than any other explanation. While we cannot completely rule out simple frequency of occurrence as an explanation, a look at recent SFI's does not offer much support for such a view. In any case, until SFI's are calculated for earlier periods, the role of the terms' frequency of occurrence in the general language remains at best undefined.

As I said, this study reports a meta-analysis based upon the work, chiefly concordances, of numerous earlier researchers. Recent developments in computer technology now make it possible, however, to greatly expand lexical research at a comparatively low cost. As this study was nearing completion, I scanned John Gower's Confessio Amantis into a microcomputer using a commercial optical character recognition program. In essence, the computer, the scanner, and the OCR software work to make a picture of a page of text, to place that picture in the computer's memory, and then to break the picture back into text which can then be edited, searched, or whatever using common word processing software. For studies like this it is no longer necessary to compile handwritten citations, nor is a complete concordance needed for each work. It is not even necessary that works to be searched be in machine readable form. Ironically, the computer concordance, a child of the 1960's may have been rendered obsolete by current computer technology.

There was not time to use the scanner to examine a large volume of work for this paper, but I was able to determine in about half an hour that the first 22 pages of Gower contain no basic color terms. For those interested in continuing such work or extending it to other languages, such developments carry great promise.

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